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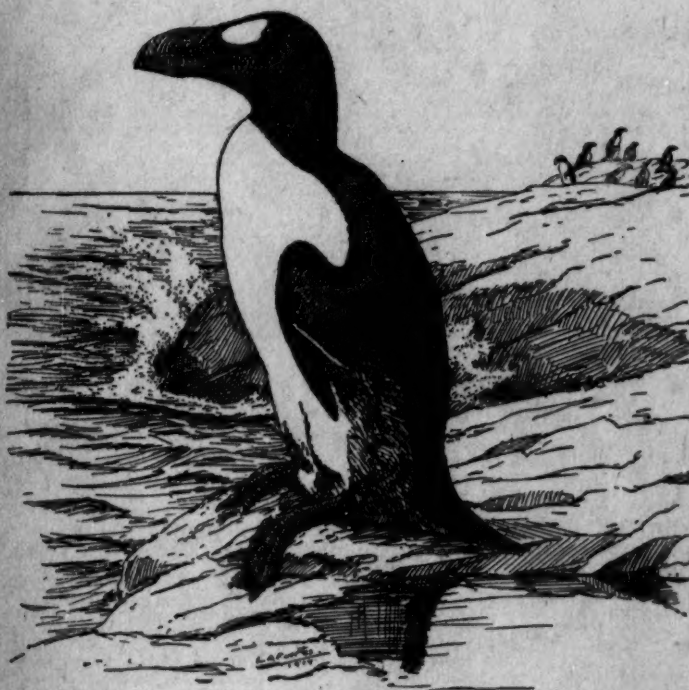
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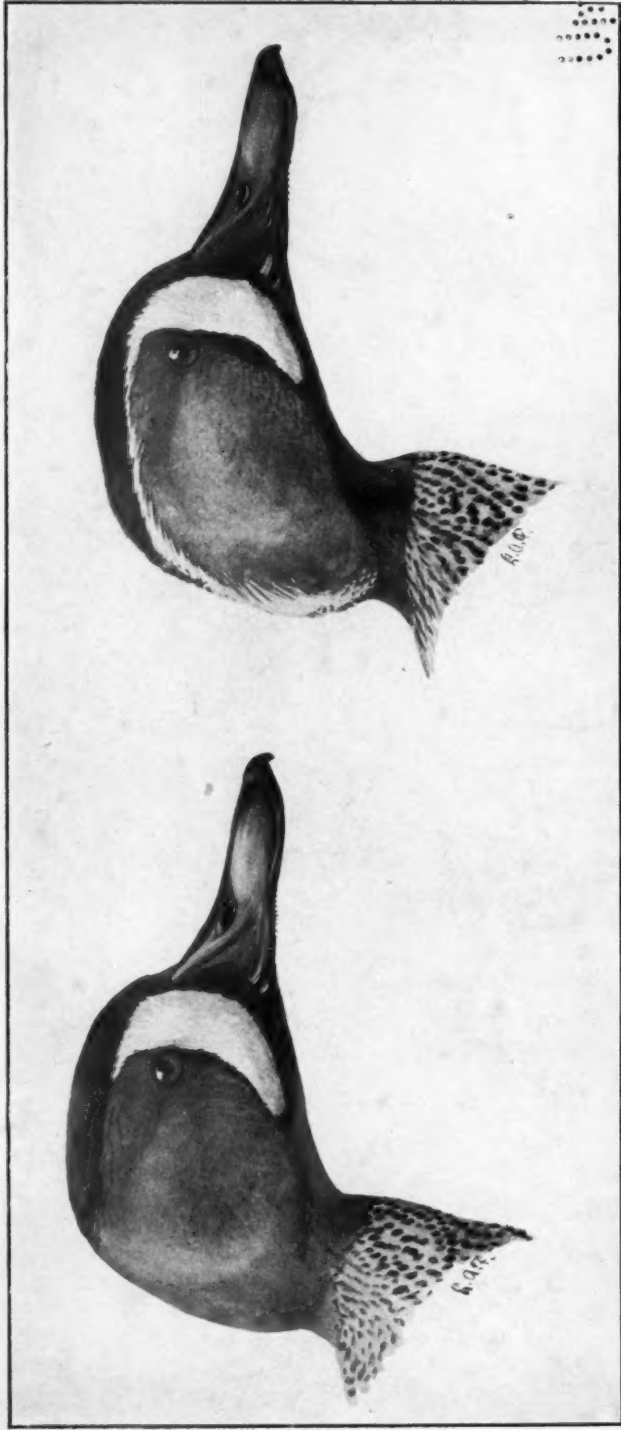
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2. SOUTHERN TEAL (*Querquedula discors albinucha*) Grand Chenier, La. April 2, 1916.

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NOTES ON A NEW SUBSPECIES OF BLUE-WINGED TEAL.

BY FRED H. KENNARD.

Plate XVII.

ON February 2, 1916, I had the good luck to be one of the guests of Mr. E. A. McIlhenny on his extremely interesting family estate at Avery Island, Louisiana. We had been watching the hundreds of wild ducks of several species that were swimming or flying about one of the ponds, when Mr. McIlhenny pointed out what he called a "Southern Teal," which, he said, was the type of Blue-winged Teal that breeds in Louisiana. Now as I had never even heard of a "Southern Teal" and, until then, had never realized that any kind of Teal bred in Louisiana, I was, of course, very much surprised and interested.

The bird was paddling about at a distance of perhaps 150 to 200 feet, and could be told at a glance from its fellows. It was, apparently, an adult male Blue-winged Teal, in nuptial plumage, but with the crescent-shaped white spot in front of the eye continued over the eye as a thin white line down to the nape, where it converged with the line from the opposite side, in a conspicuous white patch.

We saw a number of these birds while staying at Mr. McIlhenny's and later heard of them at Grand Chenier in Cameron Parish, from

Mr. R. B. Worthen, a gunner and collector of wide experience. Later still, while staying on Mr. McIlhenny's houseboat on the Ward-McIlhenny Game Preserve, in Vermilion Parish, we again heard of the bird from his warden there, and saw numbers of them among the other Teal that were wintering in the adjacent sloughs. They are known locally as the "Necktie Teal" among the gunners and natives along the Louisiana marshes, and seem to be recognized by them as the resident breeding birds of the region.

Mr. McIlhenny writes, regarding the white patch on the nape, "all of the birds that nest in the south seem to have the marking faintly, and about fifteen to twenty per cent have it very pronounced."

Mr. Worthen writes, "From what I can learn about the White-crested Teal, they are the birds that breed with us . . . All the Teal that I ever collected with the white crest were in pairs, and I think there is no doubt that they are the birds that stay with us, and the others go farther north to breed."

From the data that I have since been able to assemble, it appears that the Blue-winged Teal from the north begin to arrive along the Gulf Coast about the middle of September, and are there in large numbers until about the middle of October, when many of them leave for the south. By the first of December, the great majority of the large flocks have departed, though some birds remain throughout the winter. Mr. McIlhenny writes that "the regular migration of Blue-winged Teal from the north begins about the middle of September, and most of them have left by the end of October, although a great many stay here all winter," while Mr. Worthen states, "The Blue-winged Teal arrives here from the north from the 15th of September to the 15th of October and stays until the first of December and then goes farther south; some stay all winter."

After spending the winter farther south, these northern birds return to Louisiana, usually some time in March, and, picking up their fellows who happen to have wintered there, wend their way north early in April, practically all of them having departed by May 1. Of this northern movement Mr. McIlhenny writes, "There is a heavy migration in the spring, about March 10th. The birds increase in numbers until April 1st, when they begin to decrease and leave only resident birds in the marshes," and Mr. Worthen,

writing of the northern bird, says, "The Blue-winged Teal stays with us until about the first of April, and sometimes as late as May 1st."

With regard to the Southern Teal, it is difficult to say what proportion pass the winter on their breeding grounds or how many of them migrate. They are common during the winter, according to my own observations, in Iberia, Vermilion and Cameron Parishes, and, presumably, all along the Louisiana coastal marshes. Several specimens have been taken in Florida, where the bird may breed, and even as far east as the Isle of Pines and Andros Island. They have been taken in Texas and in Mexico, where they undoubtedly breed, and as far south as Costa Rica; and I have seen two specimens from Arizona and one from Lower California.

Mr. Louis Agassiz Fuertes writes of seeing them at Waldo, Texas, April 19, 1901, when he made a sketch of a specimen; and again in Mexico, "south of Tampico in the state of Tamaulipas, between April 18th and 21st, 1910," when he saw a flock of seventeen males, several of which were shot, but which unfortunately, owing to press of other work, were not made up into skins.

The Southern Teal starts nesting in Louisiana early in March, for Mr. McIlhenny writes, under date of April 3, 1919, "Blue-winged Teal are now nesting here, and there are a number of broods of young already hatched," and Mr. Worthen writes, "In regard to the breeding season of the Southern Blue-winged Teal, from what I know and what I can learn from the natives here who hunt, they have found the nest as early as the first of March. . . . I have found but one nest, and that was last April. I killed the male bird, and he was a fine specimen, with white running down the back of his head."

During the past year I have examined specimens in several collections, and am in receipt of data from a number of others scattered throughout the United States and Canada. Of the Teal examined, one hundred and thirty-eight were adult males in nuptial plumage, of which fifty-one were without doubt northern breeding birds, taken actually on the breeding ground or on the way there. Of these, twelve, taken in various places from North Carolina and Kansas to Manitoba, showed signs of southern blood, seven with the markings showing fairly distinctly, and five with the markings very faint. This intergradation, however, is only what should

be expected, in view of the mixup of the birds during the winter migration.

Owing to the fact that the Southern Teal begin nesting before the Blue-winged Teal depart for the north, it is difficult to separate the southern breeding birds, but of twenty-eight typical Southern Teal examined, all taken in the south, eighteen were probably breeding birds, while of a series of ten birds that were certainly breeding, collected on the breeding grounds in the second week in May, after all the northern birds had departed, all showed the diagnostic markings very distinctly, in spite of the worn state of the plumage.

Of the one hundred and thirty-eight Teal examined, only three typical Blue-winged Teal were apparently breeding in the south. One was taken at Ingram, Texas, and might have been a wounded bird; and the other two were taken in Arizona, where the two forms seem to meet, as both have been taken there during the breeding season.

Regarding the plumage of the Blue-winged Teal, Mr. A. C. Bent, who has specialized somewhat on the subject, writes me that "the moult into the eclipse plumage begins in July. The eclipse plumage is complete in August and often lasts through September." In this plumage, so far as I know, the male Southern Teal is indistinguishable from the northern bird, and I have been unable to distinguish any difference between the females of the two forms at any season. This would seem to account for the fact that among all the specimens examined there were no autumn birds with the southern marking. Continuing, Mr. Bent says, "The moult out of the eclipse begins in September, but the progress of this moult is so slow that the full plumage is seldom complete before the middle of winter, and sometimes not until March." As a usual thing, however, the Southern Teal seems to acquire its full plumage in February, when the diagnostic markings are most distinct.

The typical Blue-winged Teal of the north is shown in Mr. Fuertes' sketch, and of them, perhaps twenty per cent may have the white crescentic patch in front of the eye, elongated a trifle just above the eye, but this must not be confused with the marking of the Southern Teal, in which the white nuchal patch seems diagnostic.

In the typical Southern Teal, shown by Mr. Fuertes, the cres-

centic patch in front of the eye is continued in a thin white line over the eye down to a conspicuous nuchal patch. The feathers along the lower side of the line have their upper halves white throughout their entire length, while the feathers along the upper side of the line have their lower halves white, thus accounting for the thinness of the line. The feathers of the nuchal patch are variegated, some of them part white, and some of them wholly white, and the markings on this bird should remain distinct until the moult into the eclipse plumage. According, however, to my data, and according to Mr. McIlhenny's observations also, only about one in six or seven of the Southern Teal is so heavily marked. In the majority of cases the diagnostic markings are extremely evanescent, many of the feathers having white tips only, which seem to wear away, until in June, and before the moult into the eclipse plumage takes place, nothing may remain of these markings but a few very worn white-tipped feathers at the nape.

While, personally, I am not quite in sympathy with all the sub-specific separations in which some of our systematic ornithologists at present indulge, it appears to me that the evidence collected would seem to show that the Southern Teal, conspicuously marked as it is, and breeding as it does in a range well separated from its northern cousins, is certainly worthy of sub-specific separation, and I suggest that, with due acknowledgment to Mr. McIlhenny, who seems to have been the first to accord the bird its proper recognition, we give it a descriptive name, as follows:

***Querquedula discors albinucha* subsp. nov.—SOUTHERN TEAL.**

Type.—Fróm Grand Chenier, Cameron Parish, Louisiana. Adult male. Collection of F. H. Kennard, April 2, 1916.

Characters.—Similar to *Querquedula discors discors*, except that in the nuptial plumage of the male, the crescentic white patch in front of the eye is continued over the eye in a thin superciliary line down to the nape, where it meets the line from the opposite side to form a white nuchal patch.

Range.—Breeds commonly in Louisiana, and possibly as far east as Florida, also, undoubtedly, in Texas and Mexico, and possibly as far west as Arizona and Lower California. In winter it has been taken in the Antilles and as far south as Costa Rica.

At first thought it seems odd that a bird so well marked as this should have escaped notice for so many years; but when one takes

into consideration the evanescence of the diagnostic markings, and the inaccessibility of the coastal marshes where the bird breeds, together with the fact that the few ornithologists who seem to have visited them were generally armed only with cameras, it is perhaps not so odd after all.

In assembling the data upon which these notes are based, besides those already mentioned, to whom I am particularly indebted, my thanks are due to Messrs. Stanley C. Arthur, O. Bangs, Howarth S. Boyle, William Brewster, Jonathan Dwight, J. H. Flemming, Harry C. Oberholser, Wilfred H. Osgood, T. S. Palmer, H. S. Swarth, P. A. Taverner, W. E. Clyde Todd, and John E. Thayer.

THE SYSTEMATIC POSITION OF THE RING-NECKED DUCK.

BY N. HOLLISTER.

THE group of fuliguline Ducks now called *Marila* in the American Ornithologists' Union 'Check-List' has had its full share of nomenclatorial shifts and changes, and many schemes have been proposed for its division into genera or subgenera. It has always seemed to me that the question of the number and rank of the named super-specific sections within this group is of little importance in comparison to the error involved in the sequence given the species in the 'Check-List,' where the Canvasback is placed between the Redhead and the Scaups, and the Ring-necked Duck is put at the end of the series in the typical subgenus *Marila*.

From a study of the literature of American Ducks it is evident that the belief prevails that the Ring-necked Duck (*Marila collaris*) is a Scaup, very closely related to the Greater and Lesser Bluebills (*Marila marila* and *M. affinis*), and this error is fostered by the arrangement of the species in the 'Check-List.' One would indeed be led to believe from some accounts that the Ring-neck is not readily distinguished from the Lesser Scaup Duck (*M. affinis*)

and that the brownish ring on the neck and the gray speculum are the only important characters of differentiation. A long acquaintance with the Ring-neck in Wisconsin, where the bird is at times one of the commonest ducks killed over decoys, has led me to associate the Ring-neck in a general way with the Redhead rather than with the Scaups. A recent examination of all the species of the group in the National Museum collection convinces me that I have been correct in considering *collaris* much more intimately related to the Redhead than to the Bluebills, and that it is indeed a Pochard¹ rather than a Scaup. One of the principal characters in general use for the separation of a subgenus *Nyroca* in *Marila* is the virtually parallel-sided bill of most species of *Nyroca* as opposed to the slightly broader-tipped bill of typical *Marila* (the Scaups). In this character the Ring-neck is distinctly Pochard instead of Scaup, and its continued association with the latter is surprising.

The Ring-necked Duck is unquestionably the American representative of the Old World Tufted Duck (*Marila fuligula*), and the color of the speculum and the degree to which the birds are crested are the chief, although of course not the only, differences between them. Our Ring-neck is distinctly crested, the Tufted Duck has a complete crest, while a near relative in New Zealand (*Marila novæseelandiæ*) has virtually no crest at all. In coloration *collaris* resembles certain Pochards quite as much if not actually more than it does the Scaups. It is not infrequent that the generalized coloration of the females, which is a good indication of the close relationship, makes it difficult for the sportsman to be certain if a freshly killed bird be a small Redhead or a large Ring-neck. Aside from its blackish head the male Ring-neck in no way very much resembles a Scaup in coloration, while it has several of the characteristic items of color and color pattern frequently met with in Pochards of various species. The Pochards usually have reddish heads, but the brownish neck-ring in *collaris* is probably the remains of a once reddish neck and head in the species; one of the Asiatic Pochards (*Marila baeri*) sometimes shows a considerable patch of reddish color in its otherwise blackish-green head. In connection

¹ I use Pochard as the English equivalent for *Nyroca* of authors as opposed to the name Scaup for species of typical *Marila*.

with this persistence of the reddish mark on the neck of the male *collaris* it is interesting to note that the brown ring is completely hidden in life when the Duck is in repose. In the National Zoological Park, where the birds may be watched at close range, it often requires continuous observation of a swimming male Ring-neck for a considerable period to get a glimpse of the collar, which is seen then only when the head is extended.

The elimination of *collaris* from the typical subgenus *Marila* would naturally bring up the question of the dismemberment of *Marila* into two or more genera, a problem which experienced ornithologists have attempted without happy results, or after long study have given up as impossible. Groups approximately equivalent to the *Nyroca* and *Marila* of the 'Check-List' have been recognized as genera by many authors, and recently the division of *Marila* into three full genera, *Nyroca*, *Marila*, and *Aristonetta*, has been advocated.¹ In effect of course this does nothing more than to raise the three subgenera of *Marila*, as recognized in the A. O. U. 'Check-List,' to the rank of genera. The Ducks of this group seem to me, considering all the known forms, so intimately blended as hardly to justify even subgeneric division. I am well aware that numerous "characters" may be found to divide them into groups, even to making several full genera; but such distinctions will always be a matter of personal opinion, and sometimes do not show sufficient concern for the apparent derivations of the forms. The genus *Marila* in an unrestricted sense is a fine example of a cosmopolitan, homogeneous group of birds, not large enough to be unwieldy — and why split it up? To be really consistent in such a division of *Marila* as has been suggested, the Redheads would have to be separated from *Nyroca*, as the type of this subgenus (*Marila nyroca*) differs as much in many features, and particularly in the form of the bill, from our Redhead and from *Marila ferina* (the type of *Aythya* Boie, 1822) as all do from the type species of the subgenus *Marila* (*M. marila*), which in turn differs very appreciably in the form of the bill from *Marila affinis*, the Lesser Scaup. As for "*Aristonetta*," I think that the European Pochard (*Marila ferina*) presents almost as perfect an intermediate, in the form and

¹ Oberholser, Proc. Biol. Soc. Washington, vol. 31, p. 98. June 29, 1918.

proportions of the bill, between the Canvasback and the Redhead as one could expect to find among distinct species in nature. It would seem to me just as reasonable to associate *ferina* and *valisineria* together in a group called *Aythya*, with the Redhead excluded, as to put *M. americana* and *ferina* together, leaving the Canvasback in a special genus of its own. Considering both color and structural characters, it would be difficult to say which species, the Canvasback or the Redhead, actually represents *ferina* on the American continent.

The next edition of the A. O. U. 'Check-List' will have two additions to this group, the Tufted Duck (*Marila fuligula*) and the European Pochard (*M. ferina*); specimens of both these species having been captured on St. Paul Island.¹ It seems to me that the birds should be arranged in this next 'Check-List' in the following order: Canvasback, European Pochard, Redhead, Ring-necked Duck, Tufted Duck, Lesser Scaup Duck, Greater Scaup Duck. Personally I do not see any way to separate *Marila* into valid genera, and I think the genus should be left without any subdivision at all; but if we must recognize intergrading subgenera or must have a distinctive name for every minor superspecific group, I hope that such divisions of *Marila* as are deemed necessary will not interfere with this apparently logical sequence for the species.

¹ Evermann, Auk, Vol. XXX, p. 17. January, 1913.

JACOB POST GIRAUD, JR., AND HIS WORKS.

BY WITMER STONE.

Plate XVIII.

It has always seemed to the writer a duty of present-day ornithologists to save from oblivion as many of the facts as possible concerning the lives of those who long ago laid the foundations of our science, and he has accordingly from time to time prepared biographical sketches of some of the older American ornithologists, concerning whom little or no record has appeared in our published literature.

With the object of furthering this work Mr. William Dutcher, at the meeting of the Council of the American Ornithologists' Union in New York City, in November, 1918, submitted to him some memoranda that he had collected relative to the life of J. P. Giraud, Jr., the pioneer writer on the birds of Long Island, a field in which Mr. Dutcher himself is a notable authority and a worthy successor to Giraud. A photograph of the ornithologist was also loaned for reproduction and forms the basis of the plate which accompanies the present sketch.

Finding that there were several gaps in Mr. Dutcher's notes, the preparation of the sketch has been delayed until search might be made for the missing information, and in this connection the writer is under great obligations to Dr. George Bird Grinnell and Dr. T. S. Palmer. Indeed, he feels that his part in the preparation of the sketch has been simply that of arranging and editing the materials that these gentlemen and Mr. Dutcher have brought together.

Jacob Post Giraud, Jr., was born in New York City on August 22, 1811. His father presumably bore the same name, as in the older city directories there are listed Jacob P. Giraud and Jacob P., Jr., and as time went on the younger man occupied the same residence at No. 4 West 13th Street that was formerly the home of the elder. One of Giraud's brothers was the grandfather of the late Daniel Giraud Elliot, while another brother, Daniel Giraud,



Photograph and Autograph of J. P. Giraud, Jr., pasted on the fly-leaf of a copy of 'The Birds of Long Island,' purchased in a book store in Philadelphia and now in the library of William Dutcher.

Figure 1

was the man after whom Dr. Elliot was named. According to Dr. F. M. Chapman's sketch of Dr. Elliot's life (*Auk*, 1917, p. 1) the Giraud family was of French ancestry and settled originally at New Rochelle, N. Y., moving some two centuries ago to New York City.

Giraud was engaged in business at 138 Front St. as a dealer in provisions and resided at 44 Laurel St., 26 Walker St., and at Bergen, N. J., removing later to 4 West 13th St. Dr. Grinnell finds his name in all the directories from 1837 to 1859, in which year or soon after he moved to Poughkeepsie, N. Y., where he seems to have become somewhat of a recluse, and he died at his residence on the South Road some two miles below Poughkeepsie on July 19,¹ 1870.

A letter received by Mr. Dutcher from the late George N. Lawrence, written in 1893, is the best account of Giraud that we have and is unquestionably reliable, as Mr. Lawrence knew him well. He writes: "Jacob P. Giraud was born in New York and his business was that of a dealer in provisions. It seemed to consist mainly of furnishing supplies to the shipping. He had not the lively, companionable manners of his friend P. Brasher, but was rather reserved. He was perfectly reliable, firm in his friendships and very decided in his opinions.

"The publication of his 'Sixteen New Birds from Texas' was quite a surprise, and established the fact that there was something of importance to be done in a scientific way besides making a collection. He did not skin birds, and everything in the way of taxidermy was done for him by John G. Bell. He was careless in examining bird skins, and generally they left his hands with the feathers disarranged.

"After getting married he went to reside in New Jersey on the heights and became quite interested in gardening. He gained some notoriety from having succeeded in bringing two crops of corn to maturity on the same piece of ground in one season.

"I was desirous to get his photograph, but he was averse to having it taken. After he moved to Poughkeepsie and gave his

¹ *Amer. Jour. of Sci. and Arts*, (1870, p. 293) although Poughkeepsie papers gave the date as July 18 (T. S. Palmer).

collection to Vassar College, some of the young ladies induced him to sit for one, and a copy was sent me by Prof. Orton. After going to Poughkeepsie he did nothing more in ornithological investigation, but occasionally delivered a lecture to the college students."

Besides presenting his collection to the college he also bequeathed to the institution \$30,000, to be paid at the time of his wife's death, and two other bequests for the completion of his collection of North American birds. In 1890, probably at the time of Mrs. Giraud's death (she was living in 1887 at an advanced age), the courts revoked one-half of the main bequest and one of the additional ones, leaving only \$2,000 for the purchase of additional birds. With regard to the collection, Prof. Wm. B. Dwight, professor of Natural History at Vassar in 1887, wrote Mr. Dutcher that they had a catalogue in Giraud's own handwriting prepared in October, 1867, which consisted of a list of the specimens with an explanation of the scientific names, but with rarely any additional data. Occasionally a specimen was marked "from Long Island" or "from Texas," but nothing further.

Prof. Spencer F. Baird, when as a young man he visited New York in 1841, met Giraud at the shop of John G. Bell, the taxidermist, and was invited to inspect his collection, which Baird pronounced the finest collection of American birds that he had ever seen. Giraud gave Baird a number of specimens of shore birds and others which he did not have and promised him more the following season. Baird was at this time eighteen years of age, while Giraud was a man of thirty.

Giraud's contributions to ornithological literature were two in number, both notable works and both today rated among the rarest books of their kind.

The first was entitled: "A Description of Sixteen New Species of North American Birds described in the Annals of the New York Lyceum of Natural History. By Jacob P. Giraud, Jr. Collected in Texas, 1838. New York. George F. Nesbitt, printer, Tontine Building, corner of Wall and Water Streets. 1841."

It is a folio of eighteen leaves and eight plates, neither paged nor numbered. Of the sixteen species described only fourteen are figured. The plates are drawn by "A. Halsey Esqur." and the lithography is by N. Carrier, 2 Spruce St., N. Y. This work has been the cause of no little controversy, since, on account of

its rarity, the new names proposed in it were not generally recognized,¹ while the fact that the birds were really obtained in Texas was almost immediately questioned. While many of them have since been actually found in the United States, either in Texas or Arizona, it is certain that the collection as a whole never came from Texas. All of the species occur in Mexico, but it is questionable whether they all came from any one locality in that republic, since some of them, as shown by the types, all but three of which are preserved in the U. S. National Museum, represent races which are found only in southern Mexico. In spite of the widely expressed doubt as to the correctness of the locality, Giraud, according to Dr. Coues, stoutly maintained to the day of his death that they were taken in Texas. He never described them in the 'Annals of the New York Lyceum,' as he states on the title page, nor did he ever present any information as to who collected them or how they came into his possession. The text to the plates consists of descriptions only, with a line or two of dedication in the case of species which were named after individuals. Before the descriptions, however, there is an introductory page on which are given the names of other species contained in his "Texan" collections. This page is as follows: "In adding to my collection a number of specimens of various genera and species received from Texas, I discovered many of those species procured by Dr. Townsend and others during their 'journey across the Rocky Mountains,' which induces me to believe that many of these species that visit the Columbia River pass the winter in Texas. Figured and described in Audubon's American Ornithology." Then follows the list:

"Harris's Woodpecker. *Picus Harrisii* Audubon.

Red Shafted Woodpecker. *Colaptes Mexicanus* Swainson,
Picus Mexicanus Audubon.

Black Headed Grosbeak. *Coccoborus Melanocephalus* Swainson,
Fringilla Melanocephalus Audubon.

Evening Grosbeak. *Coccothraustes Vespertina* Swainson and
Richardson, *Fringilla Vespertina*, Cooper, Bonaparte, Audubon.

Crimson Fronted Finch. *Pyrrhula Frontalis* Bonaparte
and Nuttall, *Fringilla Frontalis* Audubon.

¹ P. L. Selater published an account of it (P. Z. S. 1855, p. 65) with the identity of such of the species as had been previously described.

- Western Blue Bird. *Sialica occidentalis* Townsend, Audubon.
 Say's Fly Catcher. *Tyrannula Saya* Swainson and Richardson,
Muscicapa Saya Bonaparte, Nuttall, Audubon.
 Rocky Mountain Fly Catcher. *Tyrannula Nigricans* Swainson,
Muscicapa Nigricans Audubon.
 Audubon's Wood Warbler. *Sylvia Audubonii* Townsend
 and Audubon.
 Yellow Headed Troopial. *Angelaius Xanthocephalus* Swainson
 and Richardson, *Icterus Xanthocephalus* Bonaparte, Nuttall
 and Audubon.
 Arctic Blue Bird. *Sialia Artica* Swainson, Nuttall, Audubon.
 Violet Green Swallow. *Hirundo Thalassinus* Swainson,
Hirundo Thalassina Audubon.
 Townsends Wood Warbler. *Sylvicola Townsendii* Nuttall,
Sylvia Townsendii Audubon.
 Hermit Wood Warbler. *Sylvicola Occidentalis* Townsend,
Sylvia Occidentalis Audubon.
 Arkansas Fly Catcher. *Tyrannus Verticalis* Say, *Muscicapa*
Verticalis Audubon, Bonaparte, Nuttall.
 Brown Song Finch. *Fringilla Crinerea* Gmel and Audubon.
 Oregon Snow Bird. *Fringilla Oregona* Townsend and Audubon.¹

"With the present heretofore undescribed species, which I have the gratification of introducing into the American Fauna.

Measurement taken from dried Specimens.

J. P. GIRAUD, Jr."

For the convenience of those who may not have access to the original volume, the list of species as given in the text headings, with their present-day equivalents as determined by Mr. Robert Ridgway (Birds of North and Middle America), is appended. The plates contain English names only which differ sometimes in spelling:

"Audubon's Oriole, *Icterus audubonii* [no figure] = *Icterus melanocephalus audubonii*, Audubon's Oriole.

Texan Fly Catcher, *Muscicapa texensis* = *Myiozetetes texensis texensis*, Giraud's Flycatcher.

Lawrence's Fly Catcher, *Muscicapa lawrenceii* = *Myiarchus lawrenceii lawrenceii*, Lawrence's Flycatcher.

¹ Errors and misspellings copied verbatim.

- Buff Breasted Fly Catcher, *Muscicapa fulvifrons* = *Empidonax fulvifrons fulvifrons*, Fulvous Flycatcher.
 Halsey's Warbler, *Sylvia halsei* = *Dendroica nigrescens*, Black-throated Gray Warbler (autumn female).
 Derham's Fly Catcher, *Muscicapa derhamii* = *Myioborus minutus minutus*, Red-bellied Redstart.
 Bell's Fly Catcher, *Muscicapa belli* = *Basileuterus belli belli*, Bell's Warbler.
 White Cheeked Titmouse, *Parus leucotis* = *Ergaticus ruber*, Red Warbler.
 Texan Finch, *Fringilla texensis* = *Astragalinus psaltria mexicanus*, Mexican Goldfinch.
 Azure Capped Manakin, *Pipra galariculata* = *Euphonia elegantissima*, Blue-hooded Euphonia.
 White Shouldered Fly Catcher, *Muscicapa leucomus* = *Setophaga picta picta*, Painted Redstart.
 Brazier's Fly Catcher, *Muscicapa brasieri* = *Basileuterus culicivorus brasherii*, Brasher's Warbler.
 Red Fronted Fly Catcher, *Muscicapa rubrifrons* = *Cardellina rubrifrons*, Red-faced Warbler.
 Olive Backed Warbler, *Sylvia olivacea* = *Peucedramus olivaceus*, Olive Warbler.
 White Throated Wren, *Certhia albifrons* = *Catherpes mexicanus albifrons*, Giraud's Canyon Wren.
 Lesser Shore Lark, *Alauda minor*. [no figure] = *Otocoris alpestris chrysolæma*, Mexican Horned Lark."

It will be noticed from the above that no less than nine of the sixteen were really undescribed species and still bear today the specific names which Giraud bestowed upon them, while seven have been found to be inhabitants of either Texas or Arizona.

A word about the men after whom Giraud named a number of his new species may not be out of place. All were his personal and ornithological friends. Audubon and Lawrence need no introduction. Abraham Halsey, who drew the plates, was according to Giraud, the president of the Brooklyn Lyceum of Natural History; Derham he refers to as "the lamented Cassimere H. Derham." In the 'Annals of the New York Lyceum' of which society he was a mem-

ber, his name appears as H. C. DeRham. The failure to capitalize the second part of his name in Giraud's work has resulted in the bird being sometimes quoted as *Durhami*, so anxious are some to emend names to a supposedly correct form! John G. Bell was the well-known taxidermist, "devoted to natural history," to quote Giraud, and Philip Brasher was a close friend and collector of Long Island birds who apparently did not appear as the author of any ornithological contributions. His name also suffered two misspellings, as may be seen above. The appearance of Giraud's own name in connection with the Texan Horned Lark *Otocoris alpestris giraudi* in later works, requires a word of explanation. Mr. Henshaw in his review of the Horned Larks (Auk, 1884, p. 260) states that this Texan race is the bird that Giraud described as *Alauda minor*, as he ascertained by examining the type, but this name being pre-occupied he renamed it in honor of its original describer. Mr. Ridgway, however, examining the same type many years later, decides that it belongs to the Mexican race *O. a. chrysolæma*. Be this as it may, I am sure no one will begrudge Giraud the well-merited recognition that was in error conferred upon him.

Giraud's other work "The Birds of Long Island," published by Wiley and Putnam, 161 Broadway, New York, in 1844, was the best piece of local ornithological work that had appeared up to that time, and is still the leading authority upon Long Island birds, though of course important additions have been made to the list of species by later ornithologists who have followed in Giraud's footsteps.

The work, moreover, is of great historic value today, since it gives us a reliable picture of water-bird life in early times, when many species now rare were of common occurrence, while there is frequent incidental mention of birds from other parts of the eastern United States. He who possesses a copy of this classic with the gilded representation of the Heath Hen on the back of the cover may well count himself fortunate. Dr. Elliott Coues apparently did not estimate this work of Giraud's at its true value in his 'Bibliography,' as he dismisses it with very curt mention. His remark, "Audubon's classification and nomenclature," moreover, is not strictly correct, and several species not mentioned by Audubon are added. That the latter fact escaped Dr. Coues' keen eye is rather remarkable. The changes from Audubon's nomenclature

are the substitution of *Turdus minor* Gmelin for *T. solitarius* as the name of the Hermit Thrush, and the recognition of the generic name *Calidris* for the Sanderling.

Anas penelope, the European Widgeon, is added to the fauna of North America on the basis of a specimen secured by Mr. George N. Lawrence, while two new species are described, *Turdus olivaceus*, the Olive-backed Thrush, and *Fuligula minor*, the Lesser Scaup Duck. In the latter case Giraud was anticipated by a few years by Eyton, who described the bird as *F. affinis*, while in the former he unfortunately selected a name that was already in use for another bird, so that neither of his technical names stand, though both of the vernacular names that he proposed are still in use.

In view of the rather crude nature of the text of his earlier work, as may be judged from the introduction quoted above, the style of "The Birds of Long Island" is rather surprising, and one wonders if it did not receive some editorial supervision from another hand. This, however, would in no way affect the value of the contents nor the credit due the author.

It is a favorite, though somewhat dangerous practice, to speculate upon the influence of one man upon the career of another. Foster in his bibliography of the writings of George N. Lawrence says: "Fortunate was it for ornithological science when, in 1841, Prof. Baird and Mr. George N. Lawrence formed an acquaintanceship, which soon ripened into a close and lasting intimacy. Stimulated by this, Mr. Lawrence then commenced the scientific study of birds." Mr. Foster evidently did not stop to think that, on the occasion of the meeting he describes, Lawrence was a man of thirty-five years of age and the possessor of a fine cabinet of birds, while Baird was a youth of eighteen, on one of his first trips from his home in Carlisle, where he had made a small collection but had as yet published nothing!¹ If the meeting produced any result, it was rather due to the influence of Lawrence upon young Baird, and doubtless the youth was even more influenced by Giraud, whose collection he saw and praised so highly. Moreover if we may be pardoned for engaging in speculation, Lawrence's mention of the publication of Giraud's 'Sixteen New Species,' in his letter to Mr. Dutcher, as being a surprise and establishing the fact that

¹ In this connection attention might be called to the brief obituary notice of Giraud in the Amer. Jour. of Science and Arts, 1870, p. 293; in which he is referred to as a particular friend of Alexander Wilson. As Giraud was but two years old at the time of Wilson's death the intimacy could hardly have been close!

there was something of importance to be done in a scientific way besides the making of a collection, is significant. Only a few years later Lawrence, who up to then had published nothing, began to issue the first of the long series of ornithological papers and descriptions of new species which made him famous. Audubon at this time must have dominated the ornithological field, and perhaps Giraud, in launching out on his own account, did even more by his example, to advance ornithological science than by the actual value of his publications.

FURTHER NOTES AND OBSERVATIONS ON THE BIRDS OF HATLEY, STANSTEAD COUNTY, QUEBEC, 1918.

BY H. MOUSLEY.

In the present paper I propose to adopt the same principle as in my previous one (Auk, Vol. XXXV, 1918, pp. 289-310), *i. e.*, of first giving a general account of the season, following this up with an annotated list of the five new species added during the year while carrying on the numbering from where it left off in 1917.

In addition to these five new species, the breeding list has been increased from seventy-seven to eighty-three species, the six new ones, whose nests, eggs or young had not been previously taken, being the Virginia Rail, Ruby-throated Hummingbird, Wood Pewee, Purple Finch, Bay-breasted Warbler and House Wren, whilst circumstances point to the fact of the Olive-sided Flycatcher, Cape May Warbler and Golden-crowned Kinglet having bred also, so that a dagger may now be added to their names in the list already given of the birds to be found at Hatley, as well as a star to the above-mentioned six species.

Now on reference to the above paper it will be seen that the months of November and December, 1917, had been conspicuous for the almost entire absence of winter birds, and as the intense cold

still prevailed during the first few months of 1918 it hardly seemed likely that I would obtain any early records, and yet how often the unexpected happens. The last few days of 1917 had seen the thermometer down to as low as minus twenty-two degrees, with a rise, however, in the New Year on January the second, to zero. On the ninth of this month a Brünnich's Murre was picked up to the south of the village in an exhausted condition, dying the next day. This bird no doubt had been driven in by the easterly gales that raged in the early part of December, as two others were obtained (as already recorded) about the middle of that month at North Hatley. It was mounted by Mr. Greer for its captor, Mr. Will Hunter of Hatley, and weighed 1 lb. 6 oz., being in an emaciated condition. From the ninth to the twenty-fifth nothing was seen except a few small flocks of Snow Buntings, but on the latter date a Northern Shrike paid a visit to my garden, and I think took toll of an English Sparrow. A few days previous to this or, to be precise, on the twenty-second, I was looking over some birds at Mr. Greer's, and had the pleasure of identifying a Ring-billed Gull which was then in the flesh. The bird had been taken in a marsh adjoining Lake Massawippi, and not so far from the village of the same name, somewhere about the ninth of December, it having been driven in also, no doubt, by one of the severe easterly gales already referred to. The bird, which was to be mounted for Mr. E. H. English of Massawippi, was a young one, apparently in the first winter plumage, being irregularly mottled and with other immature traces besides. It has already been recorded in 'The Auk,' Vol. XXXV, 1918, No. 2, p. 241.

Nothing further of interest occurred until February 25, when the first Crows were heard, this date forming a record one, as my previous earliest was March 1, 1915 and 1917. On the last day of the month a large flock of Snow Buntings was observed, also two Prairie Horned Larks, this date being just two days ahead of any previous year.

More than a week now elapsed before the first real surprise came in the shape of a rosy male Purple Finch and three females. On March the ninth, or nearly six weeks ahead of the previous earliest record, April 19, 1916. The next arrival was a Robin on the twentieth, and the day following a Bluebird and Song Sparrow, all of

these three being records by just a few days, the most being six in the case of the Song Sparrow.

On the twenty-second another surprise came, a Marsh Hawk and Meadowlark being seen on that day, both of these records curiously enough being twenty days ahead of time, the previous earliest being April 11, 1917, in the case of the former, and April 11, 1915, in that of the latter. Bronzed Grackles and Red-shouldered Hawks were also seen on this date, and the day following a Junco and Red-winged Blackbird, and a Migrant Shrike on the thirty-first, but none of these call for any special notice.

Phoebes, Tree Sparrows, Goldfinches, Savannah and Vesper Sparrows as well as a Sharp-shinned Hawk were seen between April the first and sixth, and on the seventh I obtained my first spring record for Fox Sparrows, having only seen them in the fall previously. Another surprise came on the eighth, a Flicker being noted ten days ahead of previous records, and on the twenty-fourth I found a Migrant Shrike's nest with five eggs, my previous earliest being May 10, 1916, for a full set.

The month of May was responsible for many interesting items, not the least being the abundance of many of the Warblers, especially the Blackburnian, Black-throated Blue, Black-throated Green, and Canada, as well as a fair sprinkling of the Nashville and a few Northern Parulas. The Tennessee, Pine, Yellow Palm and Wilson's Warblers, however, did not put in an appearance, or at least if they did I failed to detect them, although they were all recorded in the fall migration. It may be interesting in passing to compare my experience with that of Mr. Robert Barbour and others as recorded in 'The Auk,' Vol. XXXV, 1918, No. 4, pp. 484-485; wherein it is complained of the general scarcity of birds this year and especially of the Warblers both at Montclair, New Jersey, and also in Central Park, New York.

Cowbirds were again scarce, and no instance came under my notice of any Warbler or other species having been victimized. White-crowned Sparrows reverted to the old order of things and were scarce this spring, the only one seen being on the fourteenth in my garden, although in the fall they appeared (for them) in goodly numbers again.

On the twenty-fourth one male Indigo Bunting was seen about

three miles to the north of Ayers Cliff, also four Yellow Warblers as well as a Meadowlark. As regards the latter species, things have not materialized as I had expected, for, although their very early arrival gave promise of an increased number of breeding pairs, I have failed to notice them, in fact the bird mentioned above is the last record for the year so far as my own observation goes, although Mr. Greer saw one on November 12. The pair that nested in the meadow near my house in 1917 failed to do so this year, although they frequented the same ground from March 22 to April 20 and then disappeared, probably to carry out the decree of nature by extending their range in these parts, as they certainly are new birds to the area within recent years. On the twenty-seventh a pair of Warbling Vireos visited our orchard, and I had hopes of their remaining to breed, but they left in the afternoon. Two days later the unmistakable notes of a Whip-poor-will were heard, and on the thirty-first or last day of the month I obtained a male example of a Black-poll Warbler out of an apple tree in our orchard, this elevation being rather over 1,000 feet above sea level. This example made the second only seen in eight years, the previous one being near Ayers Cliff on May 28 of last year as already recorded, the elevation of that locality not being much over half that of the present one.

The advent of June brought high hopes of an abnormal nesting season for Warblers, and such proved to be the case, for never in my experience have I located so many breeding pairs of Black-throated Blue, Black-throated Green, Blackburnian and Canada Warblers. In addition to finding the nests and eggs of all the above (one nest of the Canada Warbler being a beautifully domed example similar in every respect to a miniature Ovenbird's), I also came across those of the Northern Parula, Magnolia, Chestnut-sided and Maryland Yellow-throat.

The greatest red-letter day of all, however, was June 24, when I saw for the first time in summer a pair of Bay-breasted Warblers and later on discovered their nest and set of four eggs. This nest was entirely different from that of any other Warbler I have come across so far, being characterized by its large size and the irregularity of outline given to it by the long coniferous twigs which composed its exterior, some of these twigs measuring $7\frac{1}{4}$ inches.

It was situated in a small fir tree close against the trunk, nine feet above the ground and three feet from the top of the tree, and was composed outwardly of the above-mentioned coniferous twigs as well as grasses, being lined inside with finer grasses and a large quantity of very fine black rootlets. The site was only seven yards from the center of a logging road, and although the nest was in a somewhat exposed position it blended so well with its natural surroundings that I was a long time in finding it. The eggs, which were four in number, were also of a distinctive type and different from any Warbler's eggs that I had hitherto found. The ground color was bluish green spotted with brown, three of them having confluent blotches at the larger end mixed with lilac, while the fourth was nearly evenly marked all over, with no decided zone at the larger end. The average dimensions of the set are .65 x .54, the short length as compared with the width giving them a rather rotund appearance. The dimensions of the nest irrespective of the spread of the coniferous twigs are as follows, viz.: outside diameter $3\frac{1}{2}$, inside $2\frac{1}{8}$ inches; outside depth $2\frac{1}{2}$, inside $1\frac{1}{4}$ inches. Both the nest and set of eggs I presented to the Victoria Memorial Museum at Ottawa.

The locating of a pair of Cape May Warblers from June the eleventh to the twenty-sixth, under circumstances which left no doubt as to their breeding, was also another source of gratification, while the nesting again of the little Northern Parula was no less pleasing. A curious fact in connection with the Cape May and Bay-breasted Warblers was, that I almost failed to detect them during the migration, only one example of the former being noted on May the fifteenth (the following up of which gave me my first specimen of that glorious little orchid *Calypso bulbosa*) and one of the latter on May the twenty-first, so that their subsequent breeding was totally unexpected, and more especially so as I had never seen either of them here before in the summer.

Yellow Warblers were seen on several occasions, more especially near Ayers Cliff, and the same remark applies equally well to the Water Thrush (*Seiurus. n. noveboracensis*). The almost entire absence of Redstarts, at least on the ground over which I ranged, seemed somewhat remarkable, and I did not see many pairs of Chestnut-sided Warblers either. Nashvilles were certainly not as

numerous during the migration as last year, but I noted two or three pairs breeding as against only one last year. Speaking of the nesting of many of the Warblers, it seemed to me that the dates were quite a week or ten days in advance of previous years, a nest of the Black-throated Blue, for instance, containing much incubated eggs this year on June the eleventh, whereas in 1916 a nest found on June the nineteenth contained perfectly fresh ones.

Black-billed Cuckoos were first noticed on the third near our orchard, and I have seen and heard them oftener since than in previous years, with the exception of 1912, when I found three nests. That beautiful songster, the Rose-breasted Grosbeak, of which I have only found one nest so far, certainly bred here again this year, a singing male being located in a large wood throughout the month of June, but its nest escaped detection. In this same wood and period also, a male Scarlet Tanager poured forth his fine notes, and added my own confirmation to that of Mr. Greer's that at rare intervals it may be found breeding here also. The status of the bird in these parts during the years 1836-39 must have been very different from what it is today, for I find that Gosse in his 'The Canadian Naturalist,' 1840 (referred to in the annotated note on the Passenger Pigeon), speaks of having seen many birds in the ploughed fields and pastures at the end of May, one day in particular in his orchard there being scarcely a moment in which three or four might not be seen within a few rods of each other! As a present-day contrast to the above I may say I have never seen more than two together, and my total record for the past eight years consists of six birds only, five males and one female. The Rose-breasted Grosbeak Gosse does not mention at all, so probably it was quite as scarce then as it is now. The number of birds enumerated in the work, however, cannot have been by any means complete, as from a list I have made there appear to be only 67 species recorded as against my 168 at the present time. The Baltimore Oriole apparently was an unknown bird here then, for Gosse distinctly states that he was unacquainted with it; a most striking fact, when we consider that today it is one of the features of almost if not every village. Of the Warblers only two species are spoken of with any degree of confidence, and strange to say they are two of the rarer class, *i. e.* the Blackburnian and Bay-

breasted Warblers, both of which today are still regular migrants if not regular breeders also, at least as regards the first named.

On June ninth and sixteenth I saw a Pine Siskin and had previously seen one on May the sixteenth, a somewhat interesting fact in view of their total absence during the winter, but the same thing occurred in 1917, when on May 31 I shot an example out of a small flock, the birds not having been observed during the winter of 1916-17.

The eighth and eleventh of the month were both red-letter days, for on the former I found the Purple Finch breeding for the first time and on the latter added the Olive-sided Flycatcher to my list, a pair being under constant observation from this date to the thirtieth, and again in the first week of August. My efforts to discover their nest were unavailing, however, although it was evident they were breeding, as on two occasions I observed one of the birds trying to break off small twigs from a tall hemlock tree.

Just previous to the eleventh I flushed a female Ruffed Grouse with her brood of chicks, the only lot seen during the summer.

Shortly after the middle of the month, or to be exact on the twenty-first, I found my first Wood Pewee's nest, but as it was about 12 feet out on a slender bough of a large maple tree, and 25 feet above the ground, I had to content myself with a photograph of its location. The nest was over a fork, and being composed outwardly of lichens it looked exactly like a natural swelling or knot in the branch.

On the twenty-fourth I came across a nest and set of four eggs of the Olive-backed Thrush, this apparently being about my usual yearly allowance. Red-eyed Vireos were more in evidence again, and I came across three or four nests during the month, but none of the Warbling or Blue-headed were found, although I had seen a few pairs of each earlier in the season, and had hopes that it was going to be another "Vireo" year similar to that of 1912. For the next fortnight or until July 15, nothing of particular interest occurred, but on this date a number of immature Golden-crowned Kinglets were observed, this date being three weeks ahead of any previous record, and may possibly be taken as indicative of the birds having bred in the district. Strange to say, they were not noted in the spring migration, although Ruby-crowned Kinglets

were somewhat numerous. On the evening of the twentieth a Catbird was heard "mewing" at 8.45 P.M., this being one of the very few birds observed, the other records being earlier in the season and near Ayers Cliff, where the bird is more usually found than around Hatley. I did not locate a single nest.

Perhaps it may not be out of place to here mention that the following birds have been more than usually numerous, viz.: Chickadees, Goldfinches, Baltimore Orioles, Kingbirds, Purple Finches, and Ruby-throated Hummingbirds, while Red-breasted Nuthatches have been entirely absent, my last record going as far back as October 3, 1917, since which time up to the present date of writing (July 28) I have not seen a single example. Its habits here certainly seem comparable to those of the Crossbills, eccentric, erratic, irregularly sporadic, as the late Mr. Ora W. Knight says of the latter birds in his 'Birds of Maine.'

On the twenty-eighth a young Sparrow Hawk was shown to me in the flesh, which had been shot a day or two before, and the party obtaining it said there were several more, evidently a family party. This evidence further corroborates that of Mr. Greer, who saw the parent birds with young near Waterville last year. The month of August opened auspiciously, for on the first I came across the Olive-sided Flycatcher again, on the outskirts of the same wood where I had previously located it in June, only rather more than a mile to the north of the former spot. I had visited this place purposely, as I was anxious to see whether my House Wrens of August 6, 1917, would return this fall. I did not come across them on this occasion, but three days later or on the fourth I located two of them in almost the identical spot as last year, and also saw the Olive-sided Flycatcher again. The day previously I saw a Prairie Horned Lark, this being the latest date so far that I had noticed the bird in the fall, but later on another example was seen by my son on October the twelfth, he being well acquainted with the bird.

On the tenth I again visited the Wren locality, and had the very great and unexpected pleasure of finding their nest, with four fully fledged young. The site, which was a quarter of a mile or so away from any house, was on the outskirts of the wood already referred to, and the nest was located some eighteen inches down from the top of a small hollow cedar stump, which stood four feet, six inches

above the ground. The inside of this little stump seemed fitted by nature for the home of a Wren, for the branches where they had been cut off from the outside extended through the bark to about the center of the stump, and where two or three came together from opposite sides they formed a natural support, of which the Wrens had taken advantage, not only for the foundation of their nest to rest upon, but also to hold up the dome. The supports of this latter (which was two inches in height, and composed of small fir twigs and some feathers) were sixteen inches down from the top of the stump, the inside diameter of which was $3\frac{1}{4}$ inches. At one side of the dome, of course, there was an aperture allowing the ingress and egress of the birds to the bed of the nest below, which was $2\frac{1}{2}$ inches from the underside of the dome. Below the bed to the foundation supports there was a further space of $3\frac{1}{2}$ inches, which was made up of small fir twigs, pithy chips, feathers and some horsehair for a lining, upon which rested the four fully fledged young. It will thus be seen that the total height of this nest from the foundation to the top of the dome was eight inches, but there will always be a lurking suspicion in my mind as to whether the dome was really intentional or only accidental. It could easily have been the latter, for the supports holding it up may possibly have formed an obstacle to the easy conveyance of materials to the nest below, and so in time a number of twigs may have had to be left behind by the birds, and so have formed an unintentional dome. However, this is one of those little nature problems that are constantly presenting themselves, and of which, as in the present case, there appears to be no immediate solution.

On the fifteenth I had yet another surprise, which enabled me to add one more breeding bird to my list, in the shape of the Virginia Rail, a parent bird of which was seen in a little marsh near Hatley Centre accompanied by her brood of young. This is the second time only that I have come across these Rails, the last occasion being in July, 1915, when I saw two of them in "the marsh" near my house. It is somewhat difficult this year to say exactly when the fall migration of warblers set in, as apparently there was no very decided wave, but I fancy it commenced on August the twentieth; at all events this is the first occasion on which I appear to have any decided increase of entries in my notebook. From this

date, however, to the end of the month things were very quiet again in the Warbler line, and it was not until the first week in September that there was another marked increase. On the twenty-first of August Nighthawks were seen at Ayers Cliff, this being my earliest date for the species, and two days later a Red-breasted Nuthatch was noted, my last record, as already mentioned, dating as far back as October 3, 1917. This day was also memorable, as I was able to add yet another new species to my list in the shape of the Philadelphia Vireo.

On the twenty-sixth, while en route to climb Mount Orford, 2,860 feet, the following birds were noted, viz.: Broad-winged Hawk at Ayers Cliff, Loon and Sora near Magog, and an Osprey near the top of the mountain. All of these birds were of interest to me, the first being new to my list, although it might have been included before, as I know I must have seen the species on two or three other occasions. The Loon I had not seen here before, although it occurs regularly on Lake Massawippi in the fall, while the Sora is an uncommon summer visitant at Hatley, one nest so far being all that has fallen to my lot. The Osprey also up to now had only been noted in the spring migration, one or two having generally paid a visit to "the marsh" for the past four years during the early part of May. Nothing of any particular interest was noticed for the next few days, with the exception of a pair of Pine Warblers and a Yellow-bellied Flycatcher until September the third, when a male Wilson's Warbler was seen at close quarters, and another on the eighth, together with a female, the latter being the first I have seen here so far. On this latter date a Cape May Warbler was also seen, and on the following day an immature Tennessee Warbler was shot, which constituted my first fall record for the species. Another interesting item noted on this same day was an example of the Acadian Chickadee, a specimen of which was obtained a few days later, or on the eleventh, while others were recorded up to the fifteenth, after which they disappeared and were not seen again during the year. On the night of the tenth there was a severe frost, in fact, this has been an abnormal year for frosts, one on the eighteenth and nineteenth of June causing considerable damage to the bean crop. After this last one in September the weather, which had been very dry for several weeks (causing many of the

wells and nearly all the brooks to run dry in August), broke down, and a period of nearly incessant rain set in, which lasted well into the middle of October. This state of things made bird hunting no sinecure, it being next to impossible to locate small Warblers or any other birds for that matter in a downpour of rain. However, I did fairly well considering, as another Broad-winged Hawk was noted on the fourteenth as well as a Yellow Palm Warbler, the only one seen in either the spring or fall migration. The most interesting event, however, was the locating of a few Blackpoll Warblers between the eighteenth and thirtieth of the month, these birds being first noted in the orchard near our house, and afterwards along the roadside, an example on one occasion being taken to insure correct identification. This is the first time of meeting them in the fall, and in the spring, as already stated, only two males have so far been located. The scarcity of this species is an interesting problem to which I have drawn attention in last year's notes. On the afternoon of the twentieth a flock of twenty-six Blue Jays passed at close range. It is not often that one sees so many of these birds together, the greatest previous number I can call to mind being seven. With Robins, however, it is a different matter, for on the twenty-third I saw a large flock, consisting of two hundred or more, which frequented exactly the same locality as they did last year, only the date was rather later then, it being the middle of October. Brown Creepers put in an appearance about now, these little birds being by no means plentiful here. White-crowned Sparrows were also seen on the twenty-third and remained until October 14, being more abundant at this time than in former years. A flock of American Pipits, consisting of seventy-five to one hundred birds, was seen on October 4, but they only remained a few days, being gone by the eighth. Sparrows of all kinds were very plentiful just about now, the Tree and Fox putting in an appearance on the tenth and twelfth respectively. Of the latter I never see very many in a season; possibly half a dozen or so would about be an average. On the fourteenth I returned to my old residence near "the marsh," not having done so at the end of last year, as intimated in my Notes for 1916-1917. For many reasons this has been a considerable advantage, as it has enabled me to form a more accurate idea of the great difference a matter

of only three miles can really make in the bird life of a place, as well as in its flora. The more swampy nature of the country round this latter residence, as I have already indicated elsewhere, has put me in touch with birds and flowers that I rarely and in many cases never came across in my old hunting grounds. Among the birds might be cited the Nashville and Tennessee Warblers, and of the wild flowers the orchids stand out prominently, no less than a dozen new species having been added to my list, which now stands at eighteen, or about a quarter of all the orchids known to occur in eastern North America. My first visit to "the marsh" was paid on October the fifteenth, when six Wilson's Snipe were flushed and one Solitary Sandpiper seen. The conditions existing at this date were very different from those of August the twentieth, when the marsh might be said to be non-existent, there being hardly a drain of water in it, and consequently none of the Limicolae were seen. Now the whole of it was nothing but a sheet of water with no mud beds whatever, the Snipe and Solitary Sandpiper being found in the cat-tails round the margins, where little patches of ground not entirely submerged gave them an opportunity of feeding. Certainly this has been my very poorest year for Sandpiper records, as, with the exception of the above one for the Snipe and Solitary Sandpiper, I have only seen one Greater Yellow-legs, one Least and a few Spotted Sandpipers, and these for the most part were noted during my infrequent visits to "the marsh." The seventeenth saw the last Myrtle Warbler, and I never remember having seen less in the fall than this year.

On the twenty-third a flock of about twenty to thirty Pine Siskins were noted and remained in the district for some little time. Nothing of further interest occurred until November the sixteenth, when the first flock of Redpolls was seen and a week later two small ones of Pine Grosbeaks, one in my garden and the other in the woods three miles away, this latter consisting of seven birds, five of which were highly plumaged males. On the twenty-sixth a large flock of Canada Geese were reported as well as one on the ninth, and I also received a letter from Mr. Greer telling me that he had seen a single female Pine Grosbeak on the twenty-third (the same date as I had observed them) and a flock of eight on the following day, among which were two full plumaged males. He

also informed me that he had seen a Meadowlark on the twelfth and a Crow on the twenty-third, and that a female Merganser had been shot on Lake Massawippi on the sixteenth. The month closed without further incident, and it was not until December the fourth that anything occurred worth chronicling. On that day two more Crows were seen, a rather unusual thing, but brought about by the mild open weather that had prevailed up to this date, the thermometer never having registered anything below zero until the first of the month. On the ninth I received another letter from Mr. Greer, informing me that he had seen a Herring Gull on the sixth, and a flock of fourteen Golden Eyes on Lake Massawippi on the fourth, out of which he and a friend had secured two females. I find Gosse in 'The Canadian Naturalist,' 1840, p. 54, records these ducks as occurring early in March (1836-39) on unfrozen parts of the Massawippi River, which looks as if they are regular although somewhat rare migrants.

On the fourteenth it became very mild, with heavy rain, so that on the following day the fields were green once more, and from this date onward fine open weather continued until the twenty-fourth, when a heavy fall of snow converted what otherwise looked like being a green Christmas into a white one. All through this period, however, and up to the end of the year very few birds were noted, only the usual small flocks of Redpolls, Pine Grosbeaks, and Chickadees being in evidence, with a few Blue Jays and a Pileated Woodpecker on the fifteenth. The other winter birds, such as Evening Grosbeaks, Snow Buntings, Northern Shrikes, and Goshawks, have not put in an appearance, or at least if they have done so I have failed to notice them.

Appended will be found the annotated notes on the four new and one extirpated species added to my list during the past year.

164. *Larus delawarensis* (Ord.). RING-BILLED GULL.—Rare transient. Probably this Gull is merely an accidental transient, blown inland by easterly gales, one of which had been raging in the first week of December, 1917, just previous to an example being taken in a marsh not so very far from Massawippi Railway Station. I saw and identified the bird (which had been kept in a frozen condition) in the flesh while calling upon Mr. Greer on January 22, 1918, and have since seen it mounted ready for its present owner, Mr. E. H. English of Massawippi, who, however,

was not the captor. It was evidently in the first winter plumage, being irregularly mottled, the back showing partly pearl blue, the primaries black, the first one with the white spot near the end, but, of course, no white tip, as in the Herring Gull, the remainder, however, showing traces of these white tips, while the bill had the band of black around it at the angle well developed, as in the adult, the tail, however, still showing immature traces, as the broad black band at the end of it was still there and the feathers were more or less mottled. The exact date of capture is not quite clear, but it was probably December the ninth.

165. *Buteo platypterus platypterus* (Vieillot). BROAD-WINGED HAWK.—Not uncommon transient August 26, September 41, possibly breeds. There is no doubt I have seen this Hawk on some few occasions previous to the above date in August and it might have been included in my list at a much earlier date had I felt disposed to depart from my usual plan of not including any Hawk or Owl unless I have actually handled it in the flesh or seen a mounted example taken in the district, or been in possession of some other equally good evidence to warrant its inclusion. However, on this occasion I had good reason for departing from my usual custom, as Dr. Charles W. Townsend was with me at the time, and being more familiar with the bird was able to verify my identification.

I saw one other example on the date given in September. In the spring they probably pass through between April 15 and May 25 and in some cases may remain to breed, although I have come across no evidence of their having done so as yet.

166. *Nuttallornis borealis* (Swainson). OLIVE-SIDED FLYCATCHER.—Rare summer visitant; May ?, June 11 to August 4.

On the above date in June I was fortunate enough to locate a pair of these birds in a spot ideally suited for breeding. For several days however, I watched them without being able to discover the nest, although I knew they were breeding from their actions. Then a dire misfortune happened, for the farmer who owned the land, being evidently in need of dollars and cents, proceeded to cut down every spruce and fir (for pulp wood) on the ground, in one of which the nest no doubt was, for the birds became restless and uneasy and deserted the spot, and it took me some little time to trace their whereabouts. However, I succeeded at last in doing so, and on June 27 had the satisfaction of seeing one of the birds break off a small twig from a tall hemlock tree, which, however, it unfortunately dropped. Further attempts to break off another having failed, the bird eventually gave up, and I no doubt lost my one and only chance of discovering the site of their second venture, as just at that time circumstances prevented me from keeping a further watch over their movements, and it was only by accident that I came across one of them again on August 1, about a mile from the spot where I had last seen them on June 30. They are interesting birds and not at all shy, and their notes are very varied, the ones uttered when I first came across them sounding like a shrill whistled pi-pee. The more general notes, however, seemed to be 'Whip-you-see,

Whip, whip, Pip, pip,' and 'Pip, pip, pip,' possibly, the 'Whip, whip' ones being the most often used.

167. *Vireosylva philadelphia* (Cassin). PHILADELPHIA VIREO.—Rare transient. August 23. On the above date in August while working through my favorite Warbler wood about a mile to the north of Hatley Village, I was fortunate enough to get a glimpse of one of the above birds, although the view at the time was really so imperfect that had it not been for my good fortune in having Dr. Charles W. Townsend with me at the time, I should hardly have felt justified in making the record public. The Doctor, however, who was some little distance away from me at the time, was fortunate in getting a much clearer view of it than I did, and having seen the bird in life before was in a better position to affirm that it was certainly a Philadelphia Vireo.

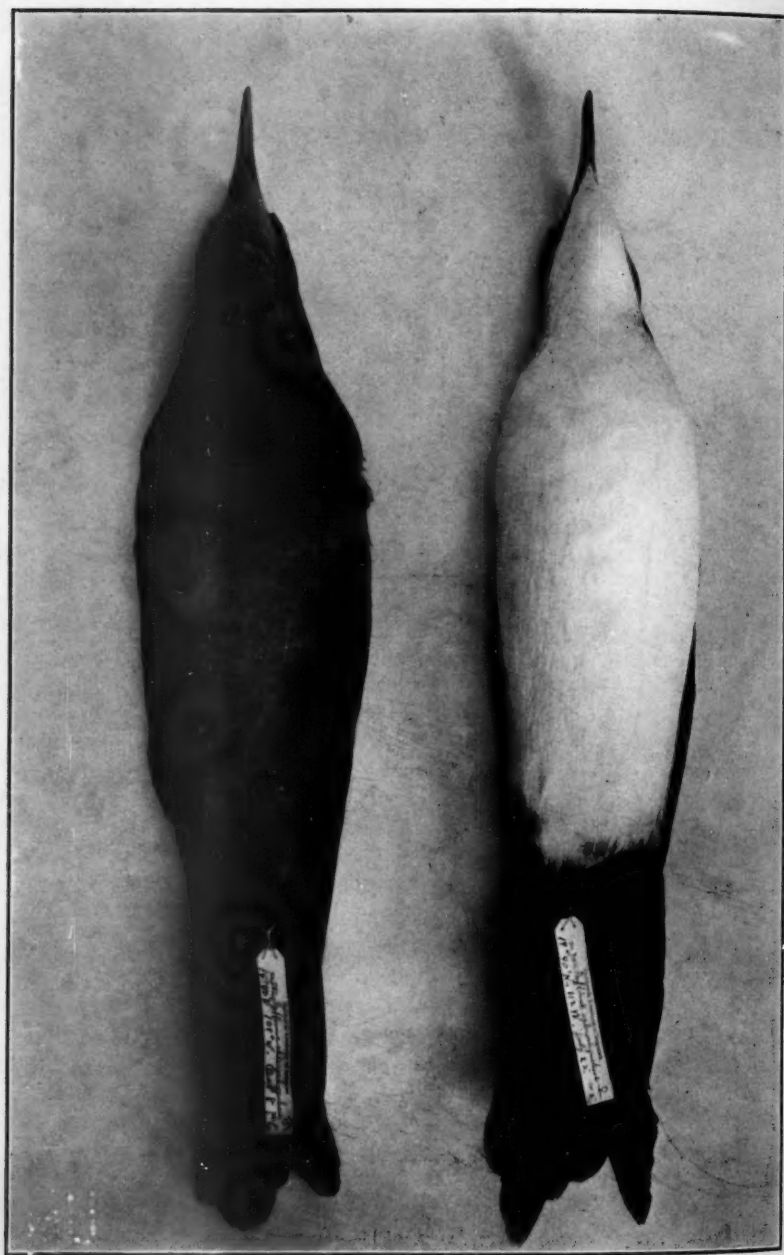
From what I saw of it, possibly its smaller size as compared with the other Vireos was the most dominant feature that impressed itself upon my mind at the moment.

168. *Ectopistes migratorius* (Linneus). PASSENGER PIGEON.—Formerly a summer visitant, but now practically if not entirely extirpated.

During the present year I have been fortunate in securing a book of much local interest entitled 'The Canadian Naturalist,' written by P. H. Gosse and published in London in 1840.

Gosse it appears came to Compton, a village about seven miles to the northeast of Hatley, in 1836 and remained there until 1839. During these three years he wrote a general account of the flora and fauna of the district, which includes the first specific reference as to the dates of the occurrence of the Passenger Pigeon in these parts that I have seen. The book is written in the form (then somewhat prevalent) of a series of conversations supposed to pass between a father and son. The first reference occurs on page 199, where the son asks, "What birds are those flying so swiftly in a small flock?" (the date apparently being about June 10, 1838); to which the father replies as follows, viz.: "That is the celebrated Passenger Pigeon (*Columba migratoria*) and the first flock I have seen this year. They do not appear to make their migrations, as birds in general do, to avoid ungenial seasons, but to obtain in abundance that food which is most suited to their wants; hence their appearances are very uncertain as to time. They are common enough in this country every summer, but I have never seen anything like the innumerable hosts of pigeons that fill the sky in the forests of the west." Later the father goes on to say, "They are much sought after for the table, as the flesh is delicate, and many are killed during their sojourn with us." Again on page 293, in the first week in September the son asks, "What birds are those which are hovering in a cloud about yonder field of buckwheat?" to which the father replies, "They are the Common Passenger Pigeon (*Columba migratoria*); they devour a great quantity of that grain in seasons when they are numerous with us. It is, I believe, the only mischief we sustain from them; and the gun takes ample revenge."

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DARK AND LIGHT PHASES OF THE WEDGE-TAILED SHEARWATER.

From the above quotations it appears evident the birds were quite numerous about 1838, some seasons appearing in greater numbers than in others, the date of their arrival, however, always being somewhat erratic.

So far, unfortunately, I have been unable to obtain any reliable information from the older inhabitants concerning the date of the last pigeons seen here, but probably they disappeared between 1880 and 1885, although it is possible a few stragglers may have lingered even up to 1896, the date of the last one recorded in Maine.

DICHROMATISM IN THE WEDGE-TAILED SHEARWATER.

BY LEVERETT MILLS LOOMIS.

*Plate XIX*¹

THE Wedge-tailed Shearwater (*Puffinus chlororhynchus*) appears to be restricted to the warmer areas of the Indian and Pacific oceans. It has been definitely reported as breeding on the Seychelle and Mascarene islands in the western Indian Ocean, on islands off the west and east coasts of Australia, on Lord Howe, Norfolk, Kermadec, and Surprise islands in the southwestern Pacific, and in the North Pacific on Volcano and Marcus islands, the Leeward group and Kauai of the Hawaiian Archipelago, and San Benedicto of the Revilla Gigedo Islands. Specimens have been obtained in the Caroline, Marshall, Phoenix, Fanning, and Society islands. Whether any of the colonies are migratory, remains to be determined.

In the extreme dark phase of this Shearwater, the general color aspect of the upper parts is dark brown and that of the lower grayish brown, becoming gray on the foreneck. In the extreme light phase, the general aspect is grayish brown above and white below, except on lower tail-coverts. Intermediates have the white

¹ The photograph reproduced in this plate was kindly taken for me by Mr. L. R. Reynolds.

of the lower parts more or less obscured with gray or grayish brown.

A difference exists in the geographic range of the two phases. The light phase is predominant in the Hawaiian Archipelago, dark-breasted birds being of rare occurrence. On San Benedicto Island the dark phase is in the ascendancy, greatly outnumbering the intermediates and white-breasted birds. In the Kermadec Islands only the dark phase is represented. On the east coast of Australia and in the Indian Ocean dark birds also prevail; but sporadic white-breasted ones may occur, for Gould figures such a specimen in Volume VII of his 'Birds of Australia.'

Although there is a difference in their distribution, the phases of this Shearwater do not correlate with climatic conditions after the manner of geographic variation. On Sunday Islet of the Kermadec group, where the light phase is absent, both phases of the Neglected Petrel are abundant, witnessing that there are no climatic barriers excluding light phases. In continental dichromatic species the factor of island isolation is eliminated and the lack of harmony of phases with environmental conditions is still more apparent. For instance, the light phase of the Red-tailed Hawk prevails in the humid Eastern States, while both the dark and light phases occur in the arid Western States, along with the gray phase of the Screech Owl and the dark and light phases of Swainson's Hawk. Further examples of the distribution of phases, independent of environment, may be found among the Herons¹ and other groups having dichromatic species.

Like geographic variation, dichromatic variation has frequently been mistaken for characters of specific rank, giving rise to numerous apocryphal species. The light phases of *Puffinus chlororhynchus* and *Pterodroma neglecta* have been respectively designated "*Puffinus cuneatus*" and "*Estrelata leucophrys*."

Dichromatic and individual variations have evolutionary possibilities, and there are just as good reasons for treating dichromatic variations (possible mutations) on the subspecies basis as there are for treating geographic variations on that basis. Whatever course is pursued, the fact remains that the subspecies rests on no better foundation than a theory that begs the question; for we do

¹ Cf. Bangs, Auk, Vol. XXXII, 1915, pp. 481-484.

not know the remote future of any of these variations, nor the manner in which existing bird species were evolved.

The subspecies theory has often been justified on the ground that it is a convenient method of handling geographic variations.¹ One has only to read Dr. Oberholser's "Monograph of the Genus *Chordeiles*"² to learn that the attempt to give definiteness to indefinite variations involves the student in an interminable maze. It is maintained that the only way out of the subspecies dilemma is to treat geographic variation in the same manner as dichromatic and individual variations are commonly treated.

THE NEST AND EGGS OF WAYNE'S WARBLER (*DENDROICA VIRENS WAYNEI*) TAKEN NEAR MOUNT PLEASANT, S. C.

BY ARTHUR T. WAYNE.

THE hope of finding the nest and eggs of this new bird was eagerly looked forward to during the spring of this year, and on March 20, 1919, I visited the place where the type specimen was taken on April 25, 1913. A few males were heard singing from the topmost branches of some tall, gigantic, deciduous trees, and were also seen to fly into very tall pines, which latter trees the birds seemed to prefer.

On March 31 I again visited the place, and although convinced that the birds were mated and the females engaged in constructing nests it was impossible to catch even a glimpse of the latter, and the males left no clue as to the whereabouts of their mates. Although much discouraged I had not given up hope, and on April 18 Mr. J. H. Moessner, who accompanied me and who took me on the previous trips in his automobile, made every effort to locate the

¹ Cf. Dwight, *Auk*, Vol. XXI, 1904, p. 64.

² U. S. Nat. Mus. Bull. 86, 1914; see especially pp. 16-18.

female and, if possible, find the nest. About 4 o'clock P. M. on April 18 I discovered a female, and with the aid of Mr. Moessner, who watched her closely, we saw the bird make a long flight and apparently stop in or near a live oak tree. We hastened to the spot, and finding no trace of her began to lose heart, when Mr. Moessner called my attention to a minute, dark spot on the terminal end of a live oak limb among numerous twigs which were branching in every direction. I then suggested to him to throw some small sticks near the nest so as to startle the bird, if the minute object was, in reality, the nest. This he did, and after some dozen ineffectual efforts succeeded in striking the limb, which at once caused the sitting bird to leave.

The nest, as I have said, was built in a live oak tree and on the end of a horizontal branch among twigs which radiated in every direction, and was absolutely concealed, being about thirty-eight feet above the ground. I of course made an attempt to secure the prize at once, although I knew the nest was inaccessible without rope or some other material for assistance, as there were no limbs above or beneath that upon which the nest was situated, and, although I tried, my attempt proved a failure. On April 21 I went again with Mr. Moessner, he bringing about 200 feet of Manila rope with which to draw in the limb to another live oak tree about twelve feet away, which I climbed, and after I had adjusted the ropes over the limb, which he was then to draw in to me, I requested him to go slowly, but the limb yielded only a little, although considerable pressure was exerted. Sad to relate, without a moments warning, the limb snapped off and the four fresh eggs that the nest contained were dashed to fragments on the ground. My hopes were likewise shattered, and I would have gladly fallen in order that the eggs might have been saved!

The nest, which is a beautiful object, is small and compact, measuring $1\frac{3}{4}$ inches in height by $1\frac{1}{2}$ inches in depth. It is constructed of strips of fine bark and weed stems, over which is wound externally the black substance that invariably is present in the lining of the nests of Bachman's Warbler (*Vermivora bachmani*). The interior of the nest is chiefly composed of a beautiful ochraceous buff substance, doubtless from the unfolding leaves of some fern, and a few feathers. The remnants of the eggs were sorrow-

fully but carefully examined and were found to be white or whitish, speckled and spotted with brownish red and lilac in the form of a wreath at the larger end.

On April 28 I again visited the locality, and was accompanied by two ladies, Miss Louise Petigru Ford of Aiken, S. C., and Miss Marion J. Pellew of Washington, D. C., both of whom are enthusiastic students of ornithology, and acquainted with most of the land birds found in the eastern United States. Our visit to the swamp was with the hope of finding the female (whose eggs were destroyed on April 21) in the act of building another nest, but although this was partially accomplished, as far as seeing the bird and watching her closely from tree to tree, she finally eluded us and could not be found again.

A very young bird just from the nest and unable to fly more than a few feet was being fed by the male parent, which shows that the birds breed irregularly. This young bird was collected (after about twenty minutes deliberation) and proved to be a male. At last I suggested to my companions to visit a spot about a mile and a half from the place where the female had eluded us, as I had seen a pair of the birds in question frequenting two magnolia trees of large size in the densest portion of the swamp. Upon arriving at the place and pointing out the magnolias to my friends, my attention was arrested almost at once by a Warbler coming from the northward of the magnolias, and which I soon identified, as a female *Dendroica virens waynei*. We kept our eyes riveted upon her, each of us taking stands around the two magnolias and thus encircling them. Miss Ford being on the southern side of one of the trees saw the female go to her nest and informed me of the fact at once. This nest was built near the extremity of a very long, drooping magnolia limb, but on the horizontal portion of it and about twenty-five feet above the ground. Near at hand, about ten feet away, a very slender ash tree grew, whose topmost branch reached the top of the nest on a level. I climbed this tree, and with the aid of a long limb that I cut from the ash drew in the limb and then attached it by two leather field-glass straps to the sapling and abstracted the four heavily incubated eggs that the nest contained.

This nest was concealed from above by the large magnolia

leaves. It measures $2\frac{1}{2}$ inches in height by 2 inches in depth and is constructed of strips of bark externally, over which is Spanish moss and hypnum moss held together by a large quantity of caterpillar silk. The interior of the nest is lavishly lined with the beautiful ochraceous buff substance from the young fern leaves, as in the first nest.

The eggs are of a white or whitish color speckled and spotted in the form of a wreath around the larger end with brownish red and lilac, and measure $.60 \times .50$, $.60 \times .50$, $.60 \times .50$, $.60 \times .49$ inch. I have known this bird ever since May 4, 1885, when I took a male at Caw Caw Swamp, Colleton County, S. C., while on a collecting trip with my friend the late William Brewster. I gave the bird to him in the flesh, and in his collection it still remains, but the nest and eggs have remained unknown until brought to light by this season's research.

My thanks are extended to Misses Ford and Pellew, who rendered me such valuable assistance on this memorable occasion.

A HERONRY ON LAKE CORMORANT, MINNESOTA.

BY HORACE GUNTHERP.

LAKE CORMORANT is located in the southwest corner of Becker County, Minnesota, and really consists of a chain of four or five small lakes extending in a general east and west direction with the exception of the last one in the series, which is situated north of the most western one. In a dry season, like the past summer, these lakes are almost, if not entirely, separated from each other by mud flats covered with a rank growth of rushes. In a wet year a rowboat can be polled through these shallow connecting straits with comparative ease. The shores of the lakes are in some places rocky, being composed of piles of glacial boulders, while in others they are shallow, with a muddy bottom in which rushes and submerged water plants grow abundantly, while here

and there an occasional inlet is filled with water lilies. As the lakes are well stocked with fish, these numerous marshy spots form excellent feeding grounds for the shore waders. The surrounding country is rolling, and was once covered with a forest of elm, hard maple, and birch, with an occasional oak. At the present time a considerable portion of the land has been cleared and is under cultivation, the woods being confined mostly to the lake shores. All the salable timber was taken out some forty years ago, and as a result few large trees are seen, most of them ranging up to sixteen or eighteen inches in diameter.

Less than a quarter of a mile from the junction of the two western lakes, near the center of a heavily wooded knoll, stands a group of larger trees in which the Great Blue Herons have built their nests, forming a heronry of no mean size. These birds have been here at least ten years, according to farmers living in the neighborhood, and from all available information are increasing in numbers. A few years ago their nests were confined to a large elm (4)¹ near the south end of the heronry, but they have gradually spread, both north and south, from this original tree until now they occupy fourteen trees, the extreme limits of which cover approximately two hundred eighty-five feet in length and one hundred feet in width. The State laws in Minnesota give adequate protection to the Herons, as they not only impose a heavy fine for the destruction of the birds, but also specify that trees containing Herons' nests shall not be cut down. But besides the State protection, it is fortunate that the land on which the heronry stands is held by a group of gentlemen living in North Dakota, who use it for a summer home, and who are very much interested in preserving the woods and its life in as near a wild state as possible.

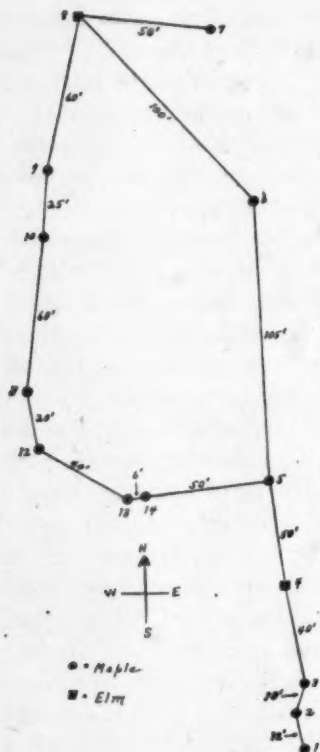
The opportunity came to the writer to make a survey of the heronry during the month of August, 1918, while spending a short time camping on the neighboring lake. Several trips were made to the trees containing the nests, but, owing to the lateness of the season, only four young birds were seen in their nests. The large size of the heronry was not suspected by the owners of the land, their explorations having taken them no farther than the first

¹ Numbers in parentheses refer to trees shown in accompanying diagram.

large elm tree (4) near the south end of the heronry. In the accompanying sketch the measurements between the trees were

roughly paced off, the trees not occupied by nests being omitted. Also, the size of the trees is only approximate, as no tape line nor rule was available for more accurate measurements.

The shape of the whole group is roughly a parallelogram with the long sides extending some one hundred seventy-five feet north and south, while it is about one hundred feet wide. From the southeast corner of this extends a row of four trees, the farthest one being one hundred ten feet from the corner. All of these trees are hard maple except two, and vary in size from eight to thirty-six inches, the majority of them being twenty or more inches in diameter. The two exceptions are elms, one (8) being located in the northwest corner, and the other (4) being the fourth from the south end of the detached line. Near the last-mentioned tree is the fallen trunk of another elm of good size which



Trees occupied by Herons.

has been dead for some time and which blew over last spring. Probably it held nests of the Heron at some past date, but not last year, as no remnants of nests were in or near its fallen branches. The hard maple (5) located at the southeast corner of the parallelogram has two trunks of about the same size, twenty inches.

The total number of nests in the trees and on the ground under them numbered sixty-six. Eight of this number were on the ground, but were in good condition, and had evidently been used

during the nesting season just closing. The large elm (4) seems to be the center of the colony, it having a total of thirty-three nests, five of which had fallen out. It is evident that the Herons in this particular heronry prefer the elm to the hard maple, as the only other elm (8) has the next largest number of nests in it, five. At first it was thought this was due to the greater height of the elms, as Herons prefer the highest trees, but in this case the hard maples used seem to be of practically the same height as the elms, but the latter have tops that spread more and so probably furnish more and better places for the placing of the nests. In the following table is given the size of each tree in the heronry, the number of nests it supported, and other data:

No.	Variety	Size in inches	Nests	Remarks
1	Hard maple	16	2	
2	" "	20	4	
3	" "	8	2	
4	Elm	36	33	
5	Hard maple	20	4	2 young birds
6	" "	24	4	
7	" "	20	1	
8	Elm	28	5	
9	Hard maple	20	1	
10	" "	22	1	
11	" "	36	2	
12	" "	24	3	2 young birds
13	" "	15	1	
14	" "	20	3	

In each case mentioned above the two young birds were in the same nest, and were well grown and able to move around with considerable ease among the branches of the tree in which the nest was placed.

The fallen nests were examined and found to consist of a mass of twigs forming a platform in some cases three feet in diameter and eighteen inches in thickness. No cementing material was used except on the upper surface, which was floored with mud. Whether this formed part of the original material used in the construction

of the nest, or was simply an accumulation of mud brought to the nest on the feet of the parent birds from their frequent trips to the marshy shores of the lake, is not clear. The solid nature of the structure of the Herons' nests is shown by the fact that a fifty-foot fall was apparently not able to damage them in the least.

The remains of different species of fish were on the ground under the trees together with parts of crayfishes. In regard to what Herons eat, Barrows¹ says, "The Blue Heron feeds mainly on fish and frogs, but also eats immense numbers of crayfish, small snakes, salamanders, insects (among them grasshoppers), meadow mice, and almost anything of an animal nature. So far as we know it never eats vegetable substances of any kind." On the other hand, Wilson² states (Vol. 2, p. 448) that it "also eats the seeds of that species of *nymphæ* usually called splatterdocks, so abundant along our freshwater ponds and rivers." When disturbed, the birds disgorge partly digested fish and other food. Heads and backbones of fish were numerous under the occupied trees, showing that the larger animals are torn to pieces and the bones picked by the young birds. This refuse accounts for the presence of numerous carrion beetles found under sticks and logs under the heronry.

A careful survey of the heronry at Lake Cormorant was made and is here recorded because it is located where it will in all probability be protected for years to come, and thus it will be possible to record the future growth of the colony accurately, and so we shall be able to form some estimate of the status of the Great Blue Heron in Minnesota and the Northwest.

¹ Barrows, Walter Bradford, 'Michigan Bird Life,' Lansing, Mich., 1912.

² Wilson, Alexander, 'American Ornithology,' 3 Vols., New York, 1877.

BIRD LIFE IN SOUTHWESTERN FRANCE.

BY THOMAS D. BURLEIGH.

THESE notes were taken during 1918, while I was serving in France with the American Expeditionary Force. I was then with the 10th Engineers, a forestry regiment that was engaged in cutting pilings, ties, and lumber of various dimensions. We were located in the Department of Landes during our entire period of foreign service, so I had an opportunity to make a detailed study of the bird life in this part of France. Our work necessarily kept us busy for six days out of the week, but our Sundays were usually free, and, being in the woods as we were, there was an opportunity of picking up odd notes even while at work. From the first of February until the 14th of September, and again for a week in December, from the 19th to the 26th, I was at Pontoux, while from the 14th of September to the 19th of December I was at Sore.

Pontoux is a small town in the extreme southwestern part of France. The surrounding country is, with the exception of occasionally scattered sand dunes, level and largely covered with long stretches of maritime pine. Small streams are numerous, and bordered here and there with alders and a sprinkling of oaks. In places the water has spread out and formed tangled alder swamps. Such cultivated land as there is lies about the town and the scattered farms. Ten kilometers west of Pontoux lies a large lake, Etang Aureilhan, formed by the damming up of a large creek, which flows from here to the ocean, a distance of eight kilometers.

Sore is fifty kilometers northeast of Pontoux. Here the country is not different from that about the latter town, although there is even less cultivated land and no large bodies of water within many miles. The Seyre River flows through the town, but is a comparatively small stream.

The following are the birds observed, with notes on their actions, migration, and nesting habits. Few of them are found in America, but many are so similar to our species, and some of them so different, that it was thought that my list would be of general interest to the readers of 'The Auk.'

1. ***Turdus viscivorus viscivorus* L.** MISTLE THRUSH.—In a large alder swamp close to the town three of these birds could be heard singing during the early morning and late afternoon throughout the spring and early summer. High in one of the larger trees they would pour out their varied whistles, trills, squawks, etc., for hours at a time. Always timid, they would become silent at the slightest alarm, only to begin again in a short time from another tree some distance away. The last bird was heard singing on July 16, and once quiet they were not seen again. This one swamp was the only place where any of this species were found.

2. ***Turdus philomelos philomelos* Brehm.** SONG THRUSH.—This species was a migrant only, flocks of varying size appearing in the spring and fall. They frequented thickets and underbrush about water, and were usually timid, disappearing with a sharp, sparrow-like chip when approached. The first ones were seen on March 24. By the 29th they were plentiful and singing. On that day some thirty of them were found in the tops of the pines at the edge of a stretch of woods, all singing. The song was a rich broken warble, and uttered by many of the birds at the same time was very pleasing. From the first of April on they gradually disappeared, and by the end of the month none were left. They were first seen again on October 3, when one bird was found feeding in a thicket bordering a stream. October 24 numerous small flocks were seen. The last record for the year was December 14, one bird again being seen.

3. ***Turdus musicus musicus* L.** REDWING.—On November 21 one bird was seen. It was feeding at the edge of a thicket, and on being approached flew up into a sapling where its red flanks and the line over its eye were easily noticeable.

4. ***Turdus pilaris* L.** FIELDFARE.—But two birds were seen, flushed on November 18 from underbrush bordering a small stream. They were very timid, flying into the top of a large tree and then into the woods some distance away.

5. ***Turdus merula merula* L.** BLACKBIRD.—Plentiful and resident, and found about thickets and underbrush close to water. Although wary and hard to approach, they would invariably utter a sharp spluttering outburst on flying, and this frequently attracted notice to them where otherwise they would have been passed by unobserved. Another note they had was a low cluck. By the end of March they were frequently heard singing, especially toward dusk. The song was a loud, rich warble. During early summer family parties were occasionally encountered instead of the single birds seen before. On the 18th of November these birds were unusually plentiful, as many as ten being frightened from one thicket. Although largely resident, some had evidently wandered in from farther north.

6. ***Œnanthe œnanthe œnanthe* (L.).** WHEATEAR.—A pair of these birds were first seen on April 12 at the edge of a slashing. They lingered here for a week, being last recorded on the 19th. They returned again early in the fall, three birds being seen on August 18. By the 25th of this month they were fairly plentiful, but for a short time only, soon

gradually disappearing. They were always found about open fields or slashings, and although inconspicuous on the ground, their white rumps caught the eye when in flight. With the exception of a low note of alarm when too closely approached, they were always silent. Occasionally one might be seen on a fence post or on a brush pile, but they seldom left the ground. On October 20 the last bird was seen, feeding at the edge of newly plowed ground.

7. *Saxicola rubetra rubetra* (L.). WHINCHAT.—A scarce summer resident, found invariably about fields or slashings overgrown with briars and furze. Erect, and with nervously jerking tail, they could be seen on the top of a furze bush, dropping occasionally to the ground for food or flying to another bush a short distance away. Usually they were in pairs and always silent. April 26 the first bird was seen, October 13 the last one.

8. *Saxicola torquata rubicola* (L.). STONECHAT.—Although less plentiful during the winter months, these birds were seen throughout the year about fields and slashings overgrown with briars and furze. Like the preceding, they remained in the tops of the bushes, dropping to the ground for food, but never remaining there long. On being approached they would fly from bush to bush, uttering a harsh, rolling chatter. On the 20th of May a male was seen in the top of a small tree, singing. The song was a weak, even-toned, drawn-out trill.

9. *Phoenicurus phoenicurus phoenicurus* (L.). REDSTART.—On April 7 one bird was seen in underbrush bordering a pond. Two were seen on April 16 in alders bordering a small stream, and from then on they gradually became plentiful, and were found entirely about houses and sheds. In the town of Mimizan-les-Bains they were much in evidence, singing from the gables of the roofs or from the tops of the chimneys. The song was loud and clear, a short, rich, thrush-like trill. On June 8 fully grown young, out of the nest several days at least, were seen about an unused house. During the summer and early fall these birds became very scarce, and never became very plentiful again. The last one was seen October 13.

10. *Dandalus rubecula rubecula* (L.). ROBIN.—Resident and very plentiful, with their small size, long tilted gray tail and habit of feeding about thickets and brush piles, these birds reminded me much of Wrens. They were found at the edge of the pine woods, but were seen largely in the neighborhood of houses. They sang at all times throughout the year, in good weather and bad, although their song, disconnected, of short warbles, trills, and occasional unmusical, wiry notes, was more evident in early spring and late fall, when other birds were largely silent. Their commonest note was a sharp chip.

11. *Luscinia megarhyncha megarhyncha* Brehm. NIGHTINGALE.—A plentiful summer resident, frequenting thickets and underbrush at the edge of fields and roads. The first bird was seen on April 25, singing from a dense thicket. The song reminded me much of our Catbird's, although it was richer and fuller. By the 28th of April the birds were quite plentiful and many were heard singing. On May 20 the first one

was heard at night. After the first week in June their singing ceased entirely and very few were seen after that. The last one was seen August 11 in some underbrush at the edge of an open field.

12. *Prunella modularis modularis* (L.). HEDGE SPARROW.—On November 21 two birds were seen, singly, feeding in thickets. They were far from timid and easy to approach. This species is evidently but a straggler, or at best a scarce migrant here.

13. *Sylvia communis communis* Lath. WHITETHROAT.—About thickets and hedges bordering open fields and woods this species was quite plentiful during the summer months. First seen on April 17, they were soon much in evidence, creeping about the hedge rows or fluttering overhead, uttering their bubbling, rollicking song. In late summer they became silent, but were not at all scarce. The last one was seen October 1.

14. *Sylvia hortensis hortensis* (Gm.). GARDEN WARBLER.—This bird was but a scarce migrant and seen but once. On April 25 five birds were found silently feeding in underbrush at the edge of a stretch of woods.

15. *Sylvia atricapilla atricapilla* (L.). BLACKCAP.—This species was fairly plentiful, but occurred as a migrant only. The first one was seen on March 24, and within a week many could be found feeding in thickets and low underbrush. The song which at this time was frequently heard was a short low warble, broken by gurgling calls and low trills. By the middle of April all had disappeared and none were seen again until September 26, when an adult male was found feeding in underbrush bordering a stream. They were last seen October 24, but were quite plentiful on that date.

16. *Sylvia undata undata* Bodd. DARTFORD WARBLER.—Resident and plentiful about fields and slashings overgrown with briars and furze. Here they could be seen creeping about the underbrush, where with their long tilted tails they appeared much like Wrens. On June 16 they were feeding young out of the nest. On that date a male was heard singing; the song was a short, weak, slightly harsh warble.

17. *Cettia cetti cetti* (Marm.). CETTI'S WARBLER.—This small reddish brown Warbler was common during the summer about small streams and ponds, the edges of which were bordered with reeds. Although shy and seldom seen, it was conspicuous by its loud ringing song. This consisted of two sharp, abrupt notes and then a short trill. The first bird was seen April 6. On September 2 one was heard singing for the last time.

18. *Acrocephalus schoenobaenus* (L.). SEDGE WARBLER.—This bird was seemingly but an irregular migrant, being seen only during early spring and early fall. As its name implies, it was found in reeds or alders bordering water. The two times it was seen were March 24, two birds, and August 11 one bird.

19. *Phylloscopus trochilus trochilus* (L.). WILLOW WARBLER.—A plentiful spring and fall migrant, haunting underbrush at the edge of open fields or woods. Although plain plumaged and small in size, they were easily noticeable because of their great activity. Flitting from limb to

limb or flying out after an insect, they were never still, for even when pausing for a moment they nervously jerked their tail continuously. The first bird was seen March 23, but it was several weeks before they became plentiful. On April 7 one was heard singing for the first time, a short, sweet warble. From the middle of April on they gradually disappeared and by the first of May none were left. They were first seen again on August 11 and within a week were quite plentiful. On August 18 a large flock was seen. After the middle of September they became scarce, but one was occasionally seen until the first week of December.

20. ***Regulus ignicapillus ignicapillus*** (Temm.). FIRE-CRESTED WREN.—This little bird resembled in every respect our Golden-crowned Kinglet—size, appearance, actions, and notes. It was a plentiful winter resident, occurring in small flocks, either alone or with wandering flocks of Long-tailed or Blue Tits. In the spring the last bird was seen on March 10, several feeding in the tops of the maritime pines at the edge of a stretch of woods. In the fall they were first seen on September 22, and were soon of common occurrence.

21. ***Aegithalos caudatus***. LONG-TAILED TIT.—Plentiful and resident, and occurring in loose, wandering flocks. Always noisy and with a great variety of notes these birds, although small, were far from inconspicuous. Most frequently heard was a deep-toned chip and a thin, high-pitched call identical with that of our Golden-crowned Kinglet. They nested early, for on April 28 two nests were found with newly hatched young. These were large balls of moss lined with feathers and well covered externally with lichens. The entrance was a small opening at the side, barely large enough to permit the bird to enter. One nest was thirty feet from the ground at the outer end of a limb of a large cork oak at the side of a road. The other was but five feet from the ground in a large briar at the side of a road, in the middle of a large mass of dead leaves lodged there during the winter.

22. ***Parus major major*** L. GREAT TIT.—This species was not so plentiful as the last, and occurred usually in pairs or at most three or four birds. They were resident, and being of a wandering disposition could, except during the nesting season, be found almost anywhere, even in the middle of the larger towns. Always noisy, they were especially so in the spring, uttering for long intervals at a time a repetition of two unmusical, high pitched notes. A late nest was found July 15 with almost fully fledged young. It was three feet from the ground, in a natural cavity in the trunk of a large maritime pine at the edge of a stretch of woods, and was a matted bed of green moss, bits of wool, and considerable cow's hair.

23. ***Parus caeruleus caeruleus*** L. BLUE TIT.—Plentiful and resident. Next to the Long-tailed Tits these birds were the most frequently observed of this family. Like the others, they occurred in small wandering flocks and frequently were found with them. A nest found the sixth of June with large young was twelve feet from the ground in a natural cavity in the trunk of an oak at the side of a road through the woods. Another

found June 12 with almost fully fledged young was in the hollow of a large shell lying on the ground near a munition works.

24. *Parus cristatus mitratus* Brehm. CRESTED TIT.— This species was resident and plentiful except during the nesting season. At this time these birds evidently retired to the deep pine woods to nest. During the fall and winter they were found with others of this family, and were easily recognized by their crest and dull plumage. On March 17 one was heard uttering a loud, clear, two-syllabled whistle.

25. *Sitta europæa europæa* L. NUTHATCH.— With the exception of the black line over its eye, this species resembled very closely our Red-breasted Nuthatch. It was found throughout the year wherever there were stretches of woods and was frequently seen associating with the Tits. Its loud, querulous notes made it noticeable wherever it occurred. On March 24 one was heard uttering a loud, clear, rolling whistle. Toward the end of May young, fully grown and out of the nest, were seen.

26. *Certhia familiaris* subsp.? CREEPER.— This species resembled in every respect — size, actions, and notes, and general plumage — our Brown Creeper. It was noisier, however, and far more agile, feeding with seeming ease on the smaller limbs, where it was often seen. It could be found throughout the year in the pines, and was often seen with the Tits and the Nuthatch. A nest found May 7 with four fully fledged young was three feet from the ground, in a crack in the trunk of a large maritime pine at the edge of a stretch of woods, and facing an open field. It was composed largely of green moss with a few feathers, soft grasses, and bits of wool.

27. *Troglodytes troglodytes troglodytes* (L.). WREN.— This, the only one of the family found in Europe, reminded me much of our Winter Wren. It was of the same size, actions, and notes, even down to its song, which could be heard at any and all times. Although found at times about houses, it was largely seen in the pine woods, feeding in the tangled thickets of briars. It was resident and plentiful at all times. Several old nests were found in pockets in upturned roots, balls of small twigs and green moss.

28. *Sturnus vulgaris vulgaris* L. STARLING.— This bird was seemingly an irregular straggler only in this part of France, for I have but two records of its occurrence. On October 24 a flock of ten birds was seen in the tops of several chestnut trees at the edge of a field, and on December 22 a flock of eight was noticed flying by overhead.

29. *Garrulus glandarius glandarius* (L.). JAY.— Resident and plentiful, occurring, except during the nesting season, in noisy, wandering flocks. With their dull brown plumage they would be far from conspicuous but for their white rump and harsh cries. Feeding in the tops of the pines at the edge of the woods, they were seldom quiet, and so always much in evidence.

30. *Pica pica pica* (L.). MAGPIE.— This bird was seemingly in every respect like our Magpie. It was resident and plentiful in the more open country, but was never seen deep in the pine woods. On May 12 a bird

was seen flying from a nest seventy feet from the ground, in the top of a large maritime pine at the edge of a short stretch of woods.

31. **Corvus corone corone** L. CARRION CROW.—In appearance and actions these birds resembled very much our Common Crow. Their vocabulary was more varied, however, some of their notes reminding me much of the Raven. They were at all times quite plentiful and occurred equally often in the open country and deep in the woods. They were usually seen singly or in pairs, although on February 24 sixty were found feeding together in a large field. During early spring they were occasionally seen circling and soaring high overhead.

32. **Lanius excubitor excubitor** L. GREAT GRAY SHRIKE.—On November 2 two birds were seen on a telephone wire at the side of a road. This was my only record for the occurrence of this species. In appearance they reminded me of our Northern Shrike.

33. **Lanius collurio collurio** L. RED-BACKED SHRIKE.—As its name implies, this bird was easily recognized by its reddish brown upper plumage. It was a scarce and irregular summer resident, haunting thickets and underbrush bordering open fields. The first bird was seen June 2, and on July 7 several were found about thickets at the lower end of the lake. They were invariably silent and timid.

34. **Lanius senator senator** L. WOODCHAT SHRIKE.—This bird, with its conspicuous plumage, underparts white, wings and tail black, and top of head and neck light brown, was a plentiful summer resident about thickets and underbrush bordering open fields or roads. In habits it was typical of its family, stationing itself in the top of a bush or tree, from which at intervals it dropped to the ground for food. The first bird was seen April 24, and on May 5 one was heard singing for the first time, the song being a hoarse, erratic warble. On August 11 the last bird for the year was seen in the top of a tree at the edge of an open field.

35. **Muscicapa striata striata** (Pall.). SPOTTED FLYCATCHER.—This dull plumaged little Flycatcher was a plentiful summer resident. It was seen largely at the edge of the pine woods or in the small scattered groves of oaks or alders, and never far from open fields or streams. The first bird was seen May 5, and within a few weeks they were of common occurrence. Always silent, however, and a little timid, they were far from conspicuous. The last bird was seen on October 21 feeding at the edge of a field.

36. **Muscicapa hypoleuca hypoleuca** (Pall.). PIED FLYCATCHER.—Throughout the spring and summer none of these birds were seen, but during the fall migration they were quite plentiful. The first bird appeared on August 25, and within a short time they were much in evidence. Unlike the preceding species, they were more or less noisy, uttering most of the time a sharp chip. They were seen largely at the edges of the woods, frequently in company with the Tits. The last bird was seen October 6, several being observed on that date.

37. **Hirundo rustica rustica** (L.). CHIMNEY SWALLOW.—In appear-

ance this bird closely resembled our Barn Swallow, and in habits and notes differed from it in no way. Flying by overhead or circling about the barn in which was its nest, it had the same cheery twitter and the same happy disposition. It was plentiful about both the scattered farms and the towns, and nested indiscriminately under the eaves of the sheds, the barns, railroad stations, and houses. The first bird was seen March 29, five being observed flying low over a field, and by April 13 they could be found everywhere. On June 6 young nestlings of the first brood were well grown. On June 12 a nest with four fresh eggs was found on a beam under the eaves of a railroad station. The nest was of pellets of mud and grasses, with a lining of feathers. The eggs were white, spotted over the entire surface with varying shades of brown. Another, on the 27th of June, held five fresh eggs, and was on a beam under the eaves of a small shed at the side of a road. A third, on July 10, held three slightly incubated eggs and was under the eaves of a railroad station. A fourth, found at Dax on the 12th of July, held four slightly incubated eggs and was on a beam in the roof of a balcony of a hotel. By August 18 the birds were found gathering into flocks, fifty being seen at one place on telephone wires at the side of a road. On September 1 a flock was noticed noisily convening in the top of a large sycamore. This habit of alighting in trees was found to be a common practice with this species. The last birds for the year were seen November 10, a flock of ten being found at the edge of Sangon, feeding about an old church.

38. *Chelidon urbica urbica* L. HOUSE MARTIN.—In appearance this bird, with the exception of its white rump, resembled closely our Tree Swallow. It was a plentiful summer resident about all the towns, there being none in which one pair at least could not be found nesting. The first bird was seen April 28, and on May 16 a pair were seen working on a newly started nest under the eaves of a house. A nest found June 14 held four fresh eggs and was under the eaves of a railroad station, on the top of an old nest of the Chimney Swallow. This was an unusual situation, for all the others found were plastered against the sides of the buildings, with no support of any kind. The nests were flask-shaped, of pellets of mud and grasses, with a lining inside of grasses and feathers. The eggs were white, unspotted. Fully fledged young were seen still being fed in the nest on July 28. The last birds for the year were seen October 24, a flock of ten being found feeding over an open field with a number of Chimney Swallows. At all times these birds were quite sociable, and it was seldom that a single pair were found nesting alone.

39. *Riparia riparia riparia* (L.). SAND MARTIN.—This bird is of course our familiar Bank Swallow. It was for some reason but an irregular migrant, although there were many banks suitable for it to nest in. During the spring it was seen but once, five birds being found April 28, feeding over the lower end of the lake. August 11 it was seen again, this time twenty birds being found on a telephone wire at the side of a road. August 18 a flock of fully a hundred was observed at almost the same spot.

It was seen for the last time September 22, a single bird feeding over an open field with several Chimney Swallows.

40. **Chloris chloris chloris** (L.). GREENFINCH.— This was a plentiful summer resident about the towns and the scattered farms. With its dull greenish plumage, it would have been easily passed by but for its characteristic song, a prolonged lazy drawl. This was frequently heard during the heat of the day, when other birds were silent, and so was more noticeable. The first birds were seen April 21, a flock flying into the top of a tree ahead of me. They were soon plentiful and remained so until early fall. In flight they uttered a note much like that of a Crossbill, and this resemblance was heightened by the way in which they tore apart pine cones for the seeds they contained. September 26 a small flock was seen for the last time.

41. **Carduelis carduelis carduelis**. GOLDFINCH.— This pretty little bird proved to be but a migrant only. During the spring it was very scarce, for it was seen but once. On April 24 one bird was seen in the top of a small tree at the edge of a field. From early fall on, however, it was almost plentiful and small flocks were frequently encountered. September 2 fifteen were found feeding on weed seeds at the edge of a millet field, and flocks of this size were of more or less common occurrence for the next few months. On October 22 fully a hundred were found feeding together in an open field. The last record for the year was November 21, two birds flying by overhead.

42. **Spinus spinus spinus**. SISKIN.— For a few weeks in early spring this species was fairly plentiful, feeding in the alders and scattered poplars along the streams. It was seen for the first time on March 10, when a flock of fifty of these birds was found feeding in the alders bordering a small creek. They were very restless, seldom remaining quiet long, and uttering a harsh twitter as they moved about. Another note that was commonly heard was a low call quite like that of our Goldfinch. On March 29 the last birds were seen, several flying by overhead.

43. **Serinus canarius serinus** (L.). SERIN FINCH.— In size and actions this species resembled the last, but in plumage was quite unlike it. The throat and breast were yellow, the sides of the latter well streaked with brown. The cheeks were reddish brown. The upper parts were brown, with a patch of yellow on the neck. It was a plentiful summer resident in the open country about the edges of the towns and about the scattered farms. The first bird was seen April 21, singing from the top of a tree at the edge of a field. The song was buzzing in nature, prolonged, and far from musical, and so distinctive that the birds were easily recognized whenever heard. On May 27 a nest was found with one fresh egg, fifteen feet from the ground at the outer end of a limb of a small oak at the side of a road. It was made of fine rootlets and bits of wool, well lined with chicken feathers, and sparingly covered externally with lichens. Another found June 5 with newly hatched young was fifteen feet from the ground, at the outer end of a limb of a small maritime pine at the edge of a stretch of woods. It was made of grasses, well lined with chicken feathers, and covered

externally with lichens. By the first of September the birds were seen in small flocks, but a few were still singing. October 22 three were found feeding at the edge of a field, and were the last seen for the year.

44. *Passer domesticus domesticus* (L.). HOUSE SPARROW.

45. *Passer montanus montanus* (L.). TREE SPARROW.—These two species were found in the towns and about some of the farms, and were plentiful and noisy wherever seen. They were much alike in appearance, the latter differing from the former in having the white of the throat extending up and forming a collar on the lower part of the neck. They appeared to associate indiscriminately, and one was about as much of a nuisance as the other.

46. *Fringilla cœlebs cœlebs* L. CHAFFINCH.—This species was undoubtedly the most plentiful of any of those found in France. It was resident, and although seen largely in the open cultivated country was of common occurrence in the pine woods, feeding in the upper branches of the larger trees. During the winter the birds wandered about in small flocks, and although never scarce they became unusually numerous during late February and early March, when their numbers were probably augmented by those which had wintered farther south. By the middle of March they had begun to scatter out and were soon seen commonly in pairs. On the 17th of March the first bird was heard singing. The song was a rapid, rich warble, reminding me much of our Vesper Sparrow, but fuller and clearer. On April 21 a female was seen gathering bits of wool from the side of a road, and on May 12 the first nest was found. This, like all the others later seen, was made of green moss, lined with soft grasses, feathers, and horsehair, and well covered externally with lichens. It held four fresh eggs and was fifteen feet from the ground, in a crotch against the trunk of a large cork oak at the side of a road. The eggs were bluish gray-clouded at the larger end with lilac, and sparingly spotted with brown. Another nest found the same day held three slightly incubated eggs, and was twenty-five feet from the ground, at the outer end of a limb of a large cork oak at the side of a road. A third nest, the 19th of May, held four slightly incubated eggs and was eight feet from the ground, in a crotch of a small maritime pine at the edge of some underbrush bordering a road. The last nest found the 7th of July, with four slightly incubated eggs, was thirty feet from the ground, at the outer end of a limb of a large sycamore at the side of a road. Toward the end of July the birds were gathering into small flocks again and soon few individual birds could be seen. On October 6 a flock of fully five hundred of these birds was found feeding at the edge of a large millet field.

47. *Pyrhula pyrrhula europæa* Vieill. BULLFINCH.—This species, one of the handsomest in France, was seen only during the fall migration, but it was fairly plentiful then. The first bird was seen October 27, when one adult male was found feeding in a thicket at the edge of a field. It was a little timid, and on being approached flew away with a low, querulous note, distinctive of this species alone. For the next two months these birds

were frequently encountered in small flocks, usually two or three together, and never more than four. They seemed to show a preference for water, for they were largely found in alders and underbrush bordering streams and ponds. They probably remained until early spring, for several were seen as late as December 22.

48. *Emberiza calandra calandra* L. COMMON BUNTING.—This bird was seen only during the fall migration and then it was very scarce. But two birds were recorded, one October 22 and the other October 25, feeding each time in underbrush bordering an open field. In general appearance and actions they reminded me much of our Song Sparrow.

49. *Emberiza cirius* L. CIRL BUNTING.—On December 14 one bird was seen feeding with a small flock of Reed Buntings at the edge of a millet field. This was my only record for the occurrence of this species.

50. *Emberiza schœniclus schœniclus* L. REED BUNTING.—It was only during the fall migration that these birds were seen, but they were fairly plentiful then. They occurred in small flocks and were largely found feeding in millet fields. The first birds were seen October 22 and the last small flock December 22. When approached they did not fly until almost stepped on, and then flew up suddenly, uttering as they went a characteristic high-pitched note. This, with their white outer tail feathers, made them easy to identify.

51. *Motacilla alba alba* L. WHITE WAGTAIL.—Resident, and plentiful about open fields, especially those under cultivation. Although seen occasionally on a fence post, they were rarely found off the ground, and were essentially birds of the meadows and pastures. On one occasion, however, September 15, three were frightened from an alder thicket in the branches of which they had evidently been feeding. They occurred largely singly or two or three birds together. Small flocks were encountered but very seldom. On June 1 five fully grown young were seen, out of the nest several days at least.

52. *Motacilla flava flava* L. GRAY-HEADED WAGTAIL.—Unlike the last this bird was only a winter resident. It was common about water, and there were no ponds or streams of any size about which one or two could not be found feeding during the fall and winter. Single birds were frequently seen, but small flocks were of equally common occurrence. In the spring the last bird was recorded March 17. The first one appeared again August 25, and within a week they were quite plentiful. On September 8 they were unusually numerous along the shore of the lake, and were observed in small flocks, feeding close to the heads of grazing cattle. This habit was later found to be a common one with this species. On September 15 a flock of fully fifty of these birds was seen, scattered about several cows in the middle of a field.

53. *Anthus trivialis trivialis* (L.). TREE PIPIT.—In appearance and actions this bird was very similar to our Pipit. It was resident and plentiful throughout the year. During the fall and winter it occurred in flocks of varying size, feeding in cultivated fields and pastures, but on the

approach of spring the flocks broke up and the birds were soon seen singly or in pairs scattered through the pine woods. Here they were frequently flushed from the ground, but were as often seen in the trees. The song, which was frequently heard during the spring and early summer, was given on the wing while fluttering overhead or from the top of a tree.

54. *Alauda arvensis arvensis*, L. SKYLARK.— This bird occurred as a migrant only. During the spring it was scarce and was seen but twice. February 24 a flock of fully a hundred of these birds was found feeding in a newly plowed field, and on March 17 two were flushed while crossing a millet field. In flight they uttered a low, gurgling note, but otherwise were silent and inconspicuous. October 19 they were seen again for the first time and almost at once were plentiful, small flocks being frequently encountered, flying by overhead or feeding in the cultivated fields. At this time they were restless and noisy, seldom remaining on the ground long, and continually uttering their low gurgling note and another short, high-pitched call. On October 25 two hundred were seen in one flock. The last bird was seen November 21, two being flushed from the edge of a millet field.

55. *Lullula arborea arborea* (L.). WOODLARK.— On September 22 five birds were found at one place circling high overhead over a large field, singing. Occasionally one would drop down into the top of a tree, or to the ground, only to fly high into the air again, still singing. This was my first record for the occurrence of this species, and I saw it but once again when, November 18, two birds were flushed from the edge of a newly plowed field.

56. *Apus apus apus* (L.). SWIFT.— In size and general appearance this bird resembled our Chimney Swift, but differed in having a forked tail, the end of which was smooth, without barbs. It was a summer resident and plentiful in and about the towns. The first bird was seen May 5 and within a few days they were of common occurrence. On May 16 many were feeding over the town of Pontoux toward dusk, and were noisy and mating then, chasing each other about with an often repeated, high-pitched squeal. On July 7 birds were noticed evidently feeding young, five being seen entering crevices in the tile roof of a house. Although still numerous up to the middle of July, they suddenly became scarce, and on July 21 the last ones for the year were seen, several circling and feeding overhead.

57. *Caprimulgus europæus europæus* L. NIGHTJAR.— This bird closely resembled in appearance and actions our Whip-poor-will and was a plentiful summer resident in the pine woods, especially at the edge of slashings or fields overgrown with furze and briars, in which places they nested. On June 18, while crossing a slashing, a female was flushed from two well-incubated eggs lying on a litter of pine bark at the foot of a briar. The eggs were creamy white, marbled with lilac and brown. On June 27 a bird was seen at dusk calling from a tree at the side of a road through the woods, uttering a deep rolling, churr-r-r-r, with a rising and falling in-

flection. This note was frequently heard for the next month, but about the first of August the birds became silent and soon disappeared.

58. **Dryobates major** (L.).¹ GREAT SPOTTED WOODPECKER.—In general appearance and notes this bird resembled our Hairy Woodpecker, but there was one striking difference. The under tail coverts were a bright red. Like our species, it was noisy but wary, and although frequently heard, for it was resident and plentiful in the pine woods, it was usually seen from a distance. A nest found June 2 held large young and was thirty feet from the ground, in the trunk of a sycamore at the edge of a stretch of woods bordering a pond.

59. **Dryobates minor** (L.). LESSER SPOTTED WOODPECKER.—On May 17 two birds were seen at the edge of a slashing in the woods. This was my only record for the occurrence of this species. In appearance they reminded me much of our Downy Woodpecker, being like the preceding species, but much smaller.

60. **Picus viridis viridis** L.¹ GREEN WOODPECKER.—At a distance this bird reminded me much of our Flicker, for it was practically the same size, and had the same bounding flight and the conspicuous white rump. A close view, however, showed the greenish yellow tinge of its plumage, from which it received its name. It was resident and plentiful throughout the pine woods, but while noisy and often heard it was less often seen, for it was wary and hard to approach. Several times, however, birds were found feeding on the ground at the edge of a slashing or of a field, and then did not fly so quickly. On May 26 a nest was found with six fresh eggs, fifteen feet from the ground, in the trunk of a small oak in the middle of a short stretch of woods. The cavity was fully a foot and a half deep, and on the chips on the bottom of it the glossy white eggs were lying.

61. **Jynx torquilla torquilla** L. WRYNECK.—On September 2 one bird was seen feeding on the ground at the side of a road. This was my only record for the occurrence of this species.

62. **Alcedo ispida ispida** L. KINGFISHER.—This bird was but an irregular straggler and was seen but twice along the same small stream, October 27 and November 1. On the latter date the one bird, as it flew by me upstream, uttered at intervals a short, shrill note.

63. **Upupa epops epops** L. HOOPOE.—This bird was a summer resident and fairly plentiful in the open cultivated country. The first one appeared about the middle of April, and from that date on one could frequently be heard uttering its loud, rolling cry from the top of some large tree. On May 29 a nest was found with small young, eight feet from the ground, in a natural cavity in the trunk of a large oak in a grove of trees about a farm house. There was no evidence of any attempt to construct a nest, the young lying on the foul-smelling decayed wood. Both the male and female were seen feeding their young. The female herself refused at first to flush from the nest, and on attempting to remove her she fluttered violently about, uttering a loud, hissing grunt and seeming, with her long neck

¹ Subspecies undetermined.

and raised crest, almost formidable. August 11 the last birds were seen for the year, four flying by overhead.

64. *Cuculus canorus canorus* L. CUCKOO.—A plentiful summer resident. On April 11 one was heard for the first time uttering its loud "cuckoo" from the edge of a stretch of pine woods, and within a few days they seemed to be everywhere. On April 17 they seemed to be especially noisy and could be heard anywhere and at any time during the day. In appearance they were about the same size as our Sparrow Hawk and had the same narrow build and flight, and so reminded me much of this bird. May 5 two were seen mating, the male chasing the female about with drooping wings and tail outspread, uttering meanwhile a low, hoarse grunt. June 16 several were heard, but after that date they became silent and disappeared entirely.

65. *Strix aluco aluco* L. BROWN OWL.—Two birds were seen September 14 in a Lombardy poplar at the side of a road, harassed by a small flock of Long-tailed Tits. This was my only record for the occurrence of this species.

66. *Circus aeruginosus* (L.). MARSH HARRIER.—On August 18 one bird was flushed from the edge of the woods bordering the lake. It was surprisingly unsuspicious, not flying until approached within a few feet. This was my one record for the occurrence of this species.

67. *Circus cyaneus* (L.). HEN HARRIER.—On December 19 one bird, an adult, in the light bluish plumage, was seen circling and beating low over a large slashing in the pine woods. This was my only record for the occurrence of this species.

68. *Buteo buteo buteo* (L.). COMMON BUZZARD.—This bird was the most plentiful and the most frequently seen of any of this family. It was resident, and was observed throughout the year, flying low through the pine woods or soaring high overhead. During early spring it was rather noisy, and its scream was remarkably like that of our Red-shouldered Hawk.

69. *Pandion haliaëtus haliaëtus* (L.). OSPREY.—Two birds were seen June 23 hovering over the lake, and were the only ones of this species recorded. Observed from a distance, they appeared to differ in no way from our Osprey.

70. *Accipiter nisus nisus* (L.). SPARROW HAWK.—This bird was evidently resident and fairly plentiful in the pine woods. In appearance it was very similar to our Sharp-shinned Hawk and possessed the same habits and notes. On August 18 two were seen circling and soaring noisily overhead.

71. *Falco tinnuculus tinnuculus* L. KESTREL.—This bird closely resembled our Sparrow Hawk in appearance, actions, and notes. It was resident and fairly plentiful in the open cultivated country, where it was frequently seen hovering with rapidly beating wings over open fields.

72. *Ardea cinerea* L. COMMON HERON.—In size and general appearance this bird was much like our Great Blue Heron. It was but an irregular straggler, for it was seen but twice about the lake. On July 7 four birds

were flushed from the edge of the water at the upper end of the lake, and September 1 two birds were found at almost the same spot.

73. *Anas platyrhynchos platyrhynchos* L. WILD DUCK.— This bird resembled in every way our Mallard — size, plumage, habits, etc. It was a scarce migrant, and was found along the small streams or in the alder swamps. April 13 the first birds were seen, a male and female being flushed from a small pond at the edge of a stretch of woods. For the next few weeks one or two were occasionally observed, and April 29 the last ones for the spring were recorded. Three were seen that day circling over an alder swamp, and seemingly mating. The only record for the fall migration was December 25, four birds being flushed from a small stream.

74. *Columba palumbus palumbus* L. WOOD PIGEON.— This bird reminded me much of our common domestic pigeon, the main difference being the white wing bar, conspicuous in flight. It was also, however, somewhat larger. It occurred as a migrant and was, especially in the fall, very plentiful. In the spring it was seen but one day, February 24, but on that day was much in evidence, large flocks going by overhead for hours at a time. October 24—it was seen again, a flock of fully five hundred birds flying by high overhead. This was the largest number observed at one time, for, although for the next three weeks flocks of varying size were encountered, seventy-five were the most found together, and occasionally eight or ten only. They were seen in the tops of the pines and appeared to feed there entirely, never being flushed from the ground. December 15 the last birds for the year were seen, four flying from the edge of a short stretch of woods.

75. *Streptopelia turtur turtur* (L.). TURTLE DOVE.— This bird reminded me much of our Mourning Dove, but unlike it was a very scarce summer resident. The first bird appeared April 26, one being flushed from the upper branches of a pine at the edge of a stretch of woods. From that date on one was seen at infrequent intervals, flying by overhead or feeding at the edge of open fields. August 18 two birds were found feeding at the edge of the woods, but none were observed after that date.

76. *Gallinula chloropus chloropus* (L.). MOOR HEN.— This bird, so much like our Purple Gallinule in appearance, was seen but once. On July 28 two adult birds, with one half-grown young, were found feeding in the lily pads at the edge of a stretch of reeds bordering the lake.

77. *Fulica atra atra* L. COOT.— This bird was a scarce and irregular migrant, although several times it was seen in large numbers. March 10 some sixty of them were found at the lower end of the lake, feeding among the reeds close to the shore. None were then seen until August 18, when two of them were observed, this time at the upper end of the lake. December 15 one bird was flushed along a small stream, and December 22 fully a hundred were found feeding along the shore of the lake. In appearance this bird closely resembled our Coot.

78. *Squatarola squatarola*. BLACK-BELLIED PLOVER.— On May 12 four birds in full summer plumage were seen feeding in an open field at the

edge of a pool formed by an overflow of the lake. This was my only record for the occurrence of this species.

79. *Charadrius hiaticula hiaticula* L. RINGED PLOVER.—On May 19 two small flocks were seen, one on the ocean beach and the other on a sand bar in the middle of a stream. This was the only day on which this species was found here.

80. *Vanellus vanellus* (L.). LAPWING.—On April 28 one bird was seen feeding on marshy ground at the edge of the lake. This was my only record for the occurrence of this species.

81. *Scolopax rusticola* L. WOODCOCK.—On November 21 one bird was flushed from the edge of a stretch of woods bordering a stream. This was my only record for the occurrence of this species.

82. *Gallinago gallinago gallinago* (L.). COMMON SNIPE.—In appearance, actions, and notes this bird resembled in every way our Wilson's Snipe. It was a scarce migrant and was found in open, marshy places. During the spring it was seen but once, two birds being flushed on March 3 from the edge of a small stream in an open field. For the fall migration there were but two records, two birds on September 1 circling noisily high over the lake, and two on September 2 feeding at the edge of a marshy field.

83. *Pelidna alpina alpina* (L.). DUNLIN.—This little Sandpiper was easily recognized by the conspicuous black on its flanks. It was seen but once, four birds being found on May 19 feeding on a sand bar in the middle of a stream.

84. *Tringa ocropus* L. GREEN SANDPIPER.—This bird, so similar in appearance to our Solitary Sandpiper, was seen but once, one bird being found on April 11 feeding at the upper end of a large pond.

85. *Tringa glareola* L. WOOD SANDPIPER.—On June 23 one bird was seen feeding in a marshy field bordering the lake. This was my only record for the occurrence of this species.

86. *Actitis hypoleucos* (L.). COMMON SANDPIPER.—This bird closely resembled in actions our Spotted Sandpiper, being a common summer resident about the streams and the few scattered ponds. It was first seen April 21, and within a week was already fairly plentiful. In late summer small flocks began to appear, and on August 25 fully thirty of these birds were found feeding together at the upper end of the lake. The last one for the year was seen September 28 about a small stream.

87. *Tringa totanus* (L.). COMMON REDSHANK.—As its name implies, this bird was easily recognized by its long bright red legs and also by the white in its wings, conspicuous in flight. It was fairly plentiful as a spring migrant, and one pair remained late enough to have possibly nested. The first birds were seen May 19, six being found feeding on a sand bar in the middle of a stream, and for the next month or so small flocks were occasionally encountered, either on the ocean beach or along the shore of the lake. At the latter place two lingered until July 28, and there is a bare chance of their having bred there.

88. *Tringa nebularia* (Gunner). GREENSHANK.— In appearance this bird reminded me much of our Lesser Yellowlegs. It was seen but once, five birds being found on April 28 feeding in an inch or so of water in an open field at the edge of the lake.

89. *Larus fuscus fuscus* L. LESSER BLACK-BACKED GULL.— On March 10 twenty birds were seen feeding along the ocean beach at low tide. This was my only record for the occurrence of this species.

90. *Larus argentatus* L. HERRING GULL.— This bird was seen but once, some twenty of them being found on December 26 feeding along the ocean beach.

NOTES ON BIRDS OF THE CHICAGO AREA AND ITS IMMEDIATE VICINITY.

BY C. W. G. EIFRIG.

WHILE using the Christmas vacation of 1918-19 to transcribe an accumulated mass of bird notes from my "day book" into my "ledger," *i. e.*, entering them under the names of the species, an intention of several years standing was strengthened into action, namely, to write up some interesting or striking experiences with and observations of birds and to record several rare occurrences. In the latter phase of the work, my friend and companion on many trips, Mr. H. L. Stoddard of the Harris Public School Extension of Field Museum, now in France, has lately rendered yeoman service by recording the seeing or taking of such rare species as the Long-tailed Jaeger, Black Rail, Roseate Tern, *Picoides arcticus*, Hoary Redpoll, Evening Grosbeak, Prairie Warbler and others (Auk, Vols. XXXIII and XXXIV). This present writing, then, is in part at least a continuation of his work, with the addition of such material as seems to me to be worthy of record. Many of my trips for years past have been to the Sand Dunes of northwestern Indiana, extending along the south shore of Lake Michigan from Gary on the west — the city made to order — to Michigan City on the east, a distance of twenty-five miles, by one to two miles wide. This is an immensely interesting region for various classes of nature

lovers and nature students, to which frequent trips, one may almost say pilgrimages, are made by such varied organizations as the Geographic Society of Chicago, the Ornithological Society, the Prairie Club, the Friends of Our Native Landscape, and numerous classes in geography, geology, botany, zoölogy and especially ecology from the local universities and other institutions of learning. A part of this unique region is now proposed to be made into a national park before it falls prey to the further encroachments of steel mills, etc., as at Gary, and all members of the A. O. U. having a chance to aid in advocating this plan should not fail to do so.

Hydrochelidon nigra surinamensis. BLACK TERN.—The breeding grounds of this species, the large cattail swamps, are being sadly encroached upon by filling in and draining, and are replaced by large industrial plants or by fields. This is notably true of two of their once greatest breeding grounds in the country, the Calumet marshes, in the southern part of Chicago, around Lake Calumet and Wolf and Hyde Lakes, and the other, the famous Worth region, now drained by a large drainage canal. The fields now started there, and the chemical works going up in their place, with their pestilential effluvia and smoke, may be a necessity, but one hates to see this change. Still, we have seen hundreds of these Terns on Lake Calumet, September 4, 1915, and at Millers, Indiana, August 30, 1916, where they were diving into the schools of minnows near the water's edge of Lake Michigan, flying parallel with it, a few yards from shore. While most of the adults are then in their winter plumage, several were seen in the deep black nuptial dress.

Sterna caspia. CASPIAN TERN.—This large Tern may be seen on certain days during migration in large numbers over the lagoons in Jackson and Lincoln Parks, and in the places named under the preceding species. When there is a strong east wind, Lake Calumet, in the southern part of the city, is alive with them, as well as with the Common, Forster's, and Black Terns, and the Herring, Ring-billed, and Bonaparte's Gulls. This also holds good for the south end of Lake Michigan.

Sterna forsteri. FORSTER'S TERN.—In the large Tern flocks along the lake shore near Millers, this species often predominates in number. On the wing it can be told from *Sterna hirundo* by its larger size and whiter, more silvery appearance, especially on the lower parts. August 30, 1916, we saw about 200 near Millers, Lake County, Indiana.

Phalacrocorax auritus auritus. DOUBLE-CRESTED CORMORANT.—This species, still breeding along the Illinois River, in the central part of the state, is not common here. A female in my collection was shot here, on the lake, October 16, 1917.

Mareca penelope. EUROPEAN WIDGEON.—I have in my collection a male bird of this species which I obtained from Mr. K. W. Kahmann, a

Chicago taxidermist. Unfortunately he did not record nor remember the place and date of its capture, but was positive that it had been taken near Chicago.

Somateria spectabilis. KING EIDER.—On November 29, 1917, six or seven of this species were shot out of a flock of about thirty, off the Municipal Pier. They were all birds of the year, and one of them is now in my collection. Woodruff's 'Birds of the Chicago Area,' 1907, does not give it.

Chen caerulescens. BLUE GOOSE.—Stoddard saw a flock of about forty of them, together with six Snow Geese (probably *C. h. hyperboreus*), on the lake shore near Gary, October 21, 1916, from which he took a fine adult male Blue Goose. He thinks they are probably rather common on certain days during the fall migration at the south end of the lake.

Branta canadensis. CANADA GOOSE.—While the wedge-formed battalions and the martial honking of this migrant are by no means uncommon here, I would like to record the red-letter day for numbers, that has been unique in my experience here or in Canada or elsewhere. It was October 23, 1917. We had the first snow of the season, the prelude to that memorably severe winter; the atmosphere was thick, there was no sun. At 1 o'clock in the afternoon a flock of from 500-1000 appeared from the west; apparently right over my house in River Forest, a suburb of Chicago, they seemed to become bewildered as to the direction of their course, and after loud consultation they turned north, where they seemed to settle in a prairie about a mile from here. At 4.30 o'clock 30 flocks were seen, each wedge-shaped and touching here and there; at 7 o'clock the air was again full of cries of large numbers, as also at 10 o'clock P.M. Whether any, and if so how many passed while I was in the class room, I do not know.

Some winters a flock remains in the vicinity, spending the day out on the edge of the ice in the lake, and the night inland on some cornfield of the previous season. Thus, January 23, 1916, about 200 were flying south. March 18, 1916, Stoddard and I came upon what seemed a convention or debating club of about forty of them. They were on the edge of the ice in the lake near Millers, and were all talking at once at the top of their voices. As the ice is then piled up high by the winter's storms, on the south end of the lake, we could not get within a quarter of a mile to them, and they seemed to know it, and kept right on. On April 1, 1916, while in the same place, a flock of thirty came from the south; at first they were in the usual formation; suddenly, as if by command, they straightened out in company line, and then suddenly and simultaneously they dropped to the lake, head first, as if they wanted to dive to the bottom. It was a most remarkable sight; the quickness and precision of the movements were baffling.

Nycticorax nycticorax naevius. BLACK-CROWNED NIGHT HERON.—This species must find it hard to hold its own against the army of boys and men with shooting irons pouring out from the great city into the sur-

rounding country on certain days. But they seem to be able to do so. In addition to the Addison heronry, which I reported several years ago, I found another large and flourishing one at Orland, about twenty miles southwest of the city. On May 19, 1917, there were from 150 to 200 nests in it, all 30-40 feet up in oak trees; some contained young recently hatched, others eggs on the point of hatching, or fresh. Two sets of five were seen. This in spite of the fact that this spring was the coldest one known in many years hereabouts there being frosts till the end of May, and slight ones up to June 16. May 30, 1914, I also saw a flock of eight at Elk Grove, in a swampy wooded tract, which probably had their nests near by.

Grus mexicana. SANDHILL CRANE.—A friend of mine at Crete, about thirty miles south of here, who is familiar with this species from a twenty years' residence in Texas, reported six flying over his village, September 11, 1915. Stoddard, who lived among them in Florida, saw three at Dune Park, April 7, 1917.

Steganopus tricolor. WILSON'S PHALAROPE.—Mr. E. W. Nelson, in his 'Birds of Northeastern Illinois,' 1876, says of the status of this species for our area, "Very common summer resident in this vicinity. Found in abundance about damp prairies and on grassy marshes." This has changed for the worse. Its former haunts are now turned into fields and factories. Personally I have seen it twice only, once at Addison, May 12, 1910, and the other time at Hyde Lake, May 31, 1912. In the still extensive marshes about this latter place a small company of them still nests nearly every year. Nests with eggs have in the last years been found by Stoddard, Abbott, and Mr. W. D. Richardson.

Tringa canutus. KNOT.—Probably less rare than supposed in migration. Stoddard took a male in breeding plumage near Millers, Ind., June 2, 1917, others September 2, 1916. I collected one out of a flock of Sanderlings on the beach near Millers, September 25, 1916.

Pisobia bairdi. BAIRD'S SANDPIPER.—A rare migrant. Stoddard took one at Dune Park, Porter County, Indiana, August 23, 1916, and two near Millers, September 2, 1916.

Tryngites subruficollis. BUFF-BREASTED SANDPIPER.—Another rare migrant. Stoddard took one at Millers, August 30, 1916.—Perhaps these rare Sandpipers would turn out to be less rare, if one could patrol the beach from Gary to Dune Park daily during migration.

Bartramia longicauda. UPLAND PLOVER.—Early in May, 1917, my son told me of a bird acting strangely near their baseball diamond, a few rods from the house. I took it to be a Killdeer, and paid no attention to it. On the 11th one of the students told me of having found a nest in the grass near my house, containing four large eggs. On the 14th I got him to show it to me, and imagine my surprise when I found it to be the nest of this species. I had seen none of the birds there all spring, but here were the eggs. Unfortunately a Crow had found them before we came, because

three of the eggs were out of the nest and picked open, only one remaining whole.

***Agialitis meloda*.** PIPING PLOVER.— While this nimble beach sprite is no longer so plentiful as when Mr. Nelson wrote, who counted thirty breeding pairs within two miles along the beach north of the city, it has not suffered itself to be brushed aside entirely. In a walk along the beach from Millers to Mineral Springs, Indiana, a distance of twelve miles, one may see two or three pair of these diminutive Plovers, as on April 22, 1917.

***Bonasa umbellus umbellus*.** RUFFED GROUSE.— As is to be expected, this handsome forest bird has vanished from all its former haunts near the metropolis. Only in the Dunes it has been able to hold out. Even here its hold is rendered precarious by hunters and more so by the Great Horned Owl. March 11, 1916, I flushed three at Mineral Springs, where one may usually see one or two in the tamarack swamp, but we have also seen them near Millers. Dr. A. Lewy found the remains of one in a Great Horned Owl's nest.

***Cathartes aura septentrionalis*.** TURKEY VULTURE.— This species is rare here. In nine years I have seen it once only, and that on April 21, 1917, when one passed low over Thatcher's woods, River Forest. Stoddard saw three at Tremont, Indiana, in the Dunes, July 4, 1917.

***Circus hudsonius*.** MARSH HAWK.— This is the commonest Hawk here, with the possibility that in parts of our area the Red-shouldered may be more numerous. The large and small swales in the sand dunes are especially attractive to it, and here one may find five or six nests within a mile or two, as Stoddard has actually done at Mineral Springs. We found a bird here as early as January 6, 1917, and five to six on March 11, 1916. Nests are found the second half of May.

***Astur a. atricapillus*.** GOSHAWK.— There were large flights of birds of this species in the fall of 1915, and again 1916. Mr. Kahmann, the taxidermist, got 30 or 40 to mount each season. One in my collection was taken at Orland, October 28, 1916.

***Buteo swainsoni*.** SWAINSON'S HAWK.— Nelson says of this bird in his list of 1876, "As this species breeds in southern Illinois, it probably also breeds in the northern portion of the state." Woodruff quotes this, but adds no instances of it having been seen or secured. In nine years I have seen only one of what I took to be this Hawk, at Addison. Mr. Kahmann tells me that among the hundreds of Hawks he has mounted, he never received one Swainson's Hawk. Therefore he was much puzzled when, on October 27, 1917, he ran into a migrating flock of fifty or more which were circling about in bewildering fashion. Finally he secured one, which proved to be this species. The rest were all like it. It is now in my collection.

***Haliaeetus l. leucocephalus*.** BALD EAGLE.— As late as twenty years ago this species nested regularly in the Dunes, as Woodruff states, but does so no longer. Now and then, however, they seem to return as if to once

more survey their ancient realm. Stoddard saw one at Millers, October 15, 1916; ten days later, on the 25th, one passed over our campus here in River Forest, and June 17, 1917, Mr. W. D. Richardson saw three at Mineral Springs, Porter County, Indiana, in the dune country.

Falco sparverius sparverius. SPARROW HAWK.—This handsome little falcon is by no means common here, either as migrant or summer resident. In the territory that I visit I know of only three or four breeding pairs, one in some big elms on the banks of the Desplaines River, and two pair at Schaumburg, Cook County, where the parent pair nests year after year in a small wooden pinnacle or turret over a buttress in the Lutheran church, and the other in a chimney near by. March 25, 1911, I saw one dart around among the flocks of *Calcarius lapponicus*, then in the fields at Addison, causing a great panic among them, but as long as I watched he did not catch any.

Aluco pratincola. BARN OWL.—Very rare here. To the one recorded by Mr. Stoddard (Auk, Vol. XXXIII, p. 328), I can add another. It was a male bird, shot at Orland, September 29, 1917, and sent to me.

Asio wilsonianus. LONG-EARED OWL.—This seems to be almost as rare as the preceding species. In the fall of 1916 I had an interesting experience with a pair, or at least two of them. November 29, while out with several boys in "Northwood," a large tract of park-like real estate, we found one in a Norway spruce. Judging from the number of pellets below, it or they, as it turned out, must have been there for some time. It was there again, on the same limb, on December 3. On the 17th there were two, also on the 20th, one always on the same limb. I asked every visitor to my house, whether ornithologically inclined or not, whether he or she would like to interview a pair of Owls, and, usually getting an affirmative answer, would take them to that spruce, it being near my home, and the birds were always there, allowing close inspection. Once I showed them to some boys, and next time I came there they were gone. I gathered what pellets remained after the snow was gone, sent them to the Bureau of Biological Survey at Washington, whence I learned that they contained the remains of thirty meadow mice, one white-footed mouse, and two shrews.

Strix varia varia. BARRED OWL.—This seems to be rarer than the preceding species. In nine years only one has come to my notice. This was shot in the village of River Forest, August 6, 1915, by a dairyman, who objected to it coming to his poultry yard for several days in succession, where it was critically eyeing his chickens.

Cryptoglaux a. acadica. SAW-WHET OWL.—Another rare species. Saw one only in nine years, and the manner of seeing it was somewhat unusual. While with some boys in what I call "Waller's Park," now called "Northwoods," near my home, an Italian workman came along who wanted to throw a bird, whose head he had wrung off, into a fire. I asked him for it, and it turned out to be this Owl. He said he had caught it with his hands in a juniper bush near his house, because it disturbed his

sleep at night by its calls. He said there were more around, but close search by us failed to reveal them. Stoddard has taken it twice in the Dunes.

Bubo virginianus virginianus. GREAT HORNED OWL.—In addition to the records given by Mr. Stoddard (Auk, XXXIII, p. 329), I would add these: February 25, 1917, he found a nest at Dune Park, about 30 feet up in a Banksian pine, in an old Crow's nest, containing two eggs; March 4 there were three, which are now in my collection. In 1918 another one was found by Dr. A. Lewy at about the same place and time, containing two eggs. This was then photographed in all its phases—eggs, young, the female on the nest and flying off—by Mr. W. D. Richardson. The female would fly off when the pine, which contained the old Crow's nest, was touched, but did not mind the closest kind of approach from the neighboring pines, from which the pictures were taken.

Nyctea nyctea. SNOWY OWL.—Every year I hear of two or three occurrences of this species. March 14, 1915, one was seen at Proviso in this township; November 10 of the same year one was taken at Huntley, which I saw after it had been mounted.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER.—A number of these occasionally winter in the Dunes, when the acorn crop is large. November 30 last I saw fifteen there, near Millers; December 21, however, only one or two, and on the 27th, two.

Colaptes auratus luteus. NORTHERN FLICKER.—For four years a pair has nested in an electric wire post at the rear of my garden. I think it is the same pair, because the first or second Flicker I see about our house in the spring usually flies directly to the hole in that pole. It is about four feet above ground. June 19, 1917, I witnessed an amusing incident of Flicker family life. While working in the garden within a few yards of the nest, the male flew to the entrance, rather noisily, as if in great glee, whereupon the female, who was inside, darted out at him; her eyes seemed to me to flash anger, and she seemed to scold him fearfully. He hastily withdrew, apparently much abashed and chagrined. December 22, 1917, I saw one still lingering at Riverside, four miles south of here, and February 17, 1917, we saw one at Mineral Springs, in the Dunes.

Antrostomus v. vociferus. WHIP-POOR-WILL.—This species must be called rare here. In nine years I have seen only ten. I believe it is decreasing in numbers over large parts of its range. During visits to western Maryland and other places, where it was formerly common, I have lately not seen or heard one. April 18, 1914, which, by the way, was an unusually early occurrence of it here, I had a unique experience with one in a woods at Whiting, Indiana, near the Illinois state line. There were two there, one of which repeatedly darted at my head.

Chordeiles v. virginianus. NIGHTHAWK.—I have so far not found a breeding pair here, although there are a few such on record. In spring they arrive about May 15 and pass through till the 31st, although in 1912 I saw one May 3, 5, and 9. They seem to me to be extending their

fall migration, however. Wherever I have been so far, in Indiana, Maryland, and Canada, they begin to return about August 12 to 15, winding up with a few stragglers during the first week in September. Of late years, however, I find them later and later, as witness these dates: September 14, 1915, 17, 1917, 22, 1916; October 4, 1914, 10, 1917; 5 and 9, 1918; I saw five each time. Two or three years ago Mr. Kahmann, who knows birds well, told me of having seen a flock of Nighthawks on, I think he said, October 29. I did not believe it then, but I believe it now.

Corvus b. brachyrhynchos. CROW.—It has often seemed to us that there is a crossing of migration routes on the south end of Lake Michigan. This can best be followed in the case of migrating Crows, because their flocks are so conspicuous. In fall, many coming along the west shore of the lake seem to be turning southeastward, and those coming along the east shore, southwestward. In the spring this is, of course, reversed.

Xanthocephalus xanthocephalus. YELLOW-HEADED BLACKBIRD.—This northwesterly species still breeds here, even if in steadily diminishing numbers. Colonies are found in the swamp and lake region on either side of the Indiana-Illinois state line, in the southeastern part of Chicago, where in June, 1917, ten to twenty pair were found. I found several pairs in a swamp near Elk Grove, May 30, 1914, which was their last nesting there, because the following summer the swamp was drained and all vestige of its former bird fauna, which included Pied-billed Grebes, Coots, Black Terns, Blue-winged Teal, King Rails, Marsh Wrens, etc., disappeared. There is also a colony in Butler's Lake, near Libertyville. Two or three years ago Stoddard told me about a few pairs in a small slough near 77th Street, Chicago, a site on which houses were built the next year.

Molothrus ater ater. COWBIRD.—

Sturnella magna argutula. MEADOWLARK.—I have repeatedly found nests of the Meadowlark near my house, which is on the edge of the prairie, with one or more eggs of the Cowbird, and one or more or all eggs of the rightful owner apparently rolled out. An example of this was one found June 24, 1917, with two Cowbird eggs inside and four Meadowlark eggs outside. The Cowbird is a decided nuisance in the Dunes, where hundreds may be seen prowling around in nesting time. The Meadowlark of this section seems to be the small southern variety *argutula*, not the large-sized *magna* of the East, as Mr. H. K. Coale has pointed out.

Icterus spurius. ORCHARD ORIOLE.—I have never seen this species here, but it occurs, with a curious, localized distribution. Mr. Edward R. Ford finds it in one or two places along the Drainage Canal, near Willow Springs, and where it flows out of Lake Michigan, at Evanston, but nowhere else.¹

Icterus galbula. BALTIMORE ORIOLE.—In June, 1918, Mr. G. Friedrich, a member of the Chicago Ornithological Society, had under

¹The past summer I found the only pair in my ten years residence here. They were nesting at Cary on the Fox River.

observation the building of a nest of this species. But, however hard and long he watched, he could never see the female. After the nest was finished and the complement of eggs laid, the nest was destroyed by an accident, and then he took one of the two birds in male plumage. Upon skinning and sexing it he found to his surprise that it was a female. Mr. Kahmann also saw the skinned bird, and he corroborates this. He tells me that he once before found the same thing. Mr. Friedrich kindly gave the skin to me. While the bird is not as brilliantly plumaged as some old males, it is more so than some young males I have seen, and is, at any rate, not in the plumage of the female at all.

Hesperiphona v. vespertina. EVENING GROSBEAK.—We have found this species to be rather numerous, if only locally so, during the last three winters, in the Sand Dunes of northwestern Indiana. This has been reported by Stoddard (Auk, Vols. XXXIII and XXXIV). In the phenomenally cold spring of 1917 several were seen in Jackson Park, Chicago, as late as May 15, and Mr. H. K. Coale saw some as late as the 21st, if I remember correctly. They are keeping this up during the present winter. November 30, 1918, I saw about eighteen near Millers, the flock being made up of males and females. They were industriously gleaning the buds of oak trees, but the stomach contents of three, which I sent to the Biological Survey at Washington, were reported as being almost entirely made up of the seeds of some species of dogwood (*Cornus*).—December 21 last, Mr. C. J. Hunt and I saw about fifty to sixty, one flock again industriously budding, another flying over. They have a remarkably swift and direct flight, something like some of the *Limicolae*, while the flocks are very compact. On the 27th we were there again, but we saw only four, having missed the main flock. They feed on the berries or seeds of fragrant sumac (*Rhus odorata*), and poison sumac (*R. toxicodendron*) and probably others, besides the *Cornus* mentioned above.

Pinicola enucleator leucura. PINE GROSBEAK.—So far as I know this northern winter visitant has not been seen here for years past. It was therefore with some pleasure that I saw two near Millers, November 30, 1918, one of which was taken.

Carpodacus p. purpureus. PURPLE FINCH.—This species is strangely rare here, and as erratic in its coming and going as can be. I have seen it seven times only in nine years, as follows: January 6, 1917, one only in the tamarack swamp at Mineral Springs in the Dunes; February 7, 1912, one all alone in the large Addison woods; April 1, 1916, two near Millers; May 2 and 3, 1916, a flock of ten in "Waller's Park," near my home; October 6 and 9, 1916, flocks of six at La Grange and Crete.

Acanthis l. linaria. REDPOLL.—Besides the large numbers we have seen in the Dunes, reported by Mr. Stoddard, I have seen many here at River Forest in the fall and winter of 1916-17, from November 15 to March 9. December 27, 1918, I again saw about twenty-five near Millers.

Calcarius l. lapponicus. LAPLAND LONGSPUR.—After much searching for this species in various parts of our area, I find them rare in most

places in the proper season, but Addison, where I first made their acquaintance, continues to be the paradise for them that I called it in an article in 'The Auk,' Vol. XXX, p. 238. To the bare, wind-swept fields around the old windmill they still come by the hundred or thousand every season. April 8, 1916, we found them there in great numbers, and on a day evidently to their liking. It was 33°, dark, and a strong northerly gale was blowing so hard as to make walking and seeing difficult. Yet in spite of that, or probably because of it, they seemed to be enjoying themselves, chasing each other and singing in a general frolic. Many males were in nearly their full nuptial dress. In specimens taken at this time of the year Mr. Stoddard and I have repeatedly found numbers of pinfeathers on head and neck, which would indicate that this acquisition of the nuptial coloring is not entirely due to abrasion, but wholly or in part to moulting. It has, after much observation of them, always seemed strange to me that the high colors of their nuptial plumage should by abrasion appear so suddenly and so symmetrically. These pinfeathers show that it is not due to abrasion only, if at all.

Passerherbulus h. henslowi. HENSLOW'S SPARROW.—Given its weedy pastures, preferably with water near by, this queer Sparrow may be met with in all parts of this region. It is most common in the large swale at Mineral Springs, where the Marsh Hawk is found in numbers.

Passerherbulus lecontei. LECONTE'S SPARROW.—A rare migrant and still rarer breeder. Stoddard took one October 10, 1916, and Mr. E. R. Ford found a nest, as probably reported elsewhere.

Passerherbulus n. nelsoni. NELSON'S SPARROW.—Since the taking of two specimens at Addison, August 31, 1910, and September 16, 1911, previously reported, I have found no more.

Spizella p. passerina. CHIPPING SPARROW.—Another species strangely rare here. As a breeder it is almost absent. The last two or three years, however, a pair or two bred near my house; last year a nest was in an Austrian pine on my lawn, five feet up, where the incubating female almost allowed one to touch her.

Junco h. hyemalis. SLATE-COLORED JUNCO.—In the exceptionally cold spring of 1917 members of this species were seen unusually late. I saw several May 11, and Dr. A. Lewy, a member of the Chicago Ornithological Society, as late as the 13th and 19th, in Jackson Park, whereas, ordinarily, the last are seen during the last week in April.

Peucaea aestivalis bachmani. BACHMAN'S SPARROW.—Since their appearance here in River Forest, May 9, 1915, when I saw them till July 1, I have seen no more. Dr. A. Lewy, however, saw one in Jackson Park, June, 1918.

Spiza americana. DICKCISSEL.—This species seems to be yearly getting rarer or more erratic or both. In 1916 and 1917 I saw only two pair in each year, and these near my home, in clover fields. In the former year they came June 9, in the latter, June 19. In 1918 I saw none.

Petrochelidon l. lunifrons. CLIFF SWALLOW.—This species seems

to me to be becoming one of the rarest of birds. I have seen none for several years in the Chicago Area and next to none in various other localities visited by me. I hope there is a corresponding increase in their numbers elsewhere, but I am skeptical about it. The large, flourishing colony at Addison, twenty miles west of Chicago, consisting of about fifty pairs, has disappeared.

***Iridoprocne bicolor.* TREE SWALLOW.**

***Stelgidopteryx serripennis.* ROUGH-WINGED SWALLOW.**—June 10, 1915, I saw a pair of each of these species nesting in a dead cottonwood on the top of a dune at Millers. In each case the female looked out of the hole and the male perched as close by as he could. The Tree Swallow was formerly a common summer resident, but is now rare as such, only common in migration. The latter is uncommon here, but becomes abundant just a little south of us. Along the Kankakee River, I saw about thirty, April 28, 1917.

***Bombycilla cedrorum.* CEDAR WAXWING.**—This species is decidedly on the increase in number in several parts of our region, notably in River Forest and the Dunes. The last two years many have been nesting in Waller's Park, now called "Northwoods," here.

***Lanius ludovicianus migrans.* MIGRANT SHRIKE.**—The number of birds of this species is deplorably declining here. When I first moved to River Forest there was a pair nesting near my house yearly, but in the last years I have seen none anywhere. In other regions I find the same condition. There is a pair nesting yearly at Mineral Springs in the Dunes, also at Addison, where it occupies the same hawthorn bush year after year.

***Protonotaria citrea.* PROTHONOTARY WARBLER.**—This handsome species is extending its range northward along the Desplaines River. Several years ago it was found nesting at Riverside by Mr. M. O. Schantz, and since then it has been seen twice in River Forest, as on May 31, 1917. On the Kankakee, sixty miles south, it is abundant.

***Dendroica caerulescens caerulescens.* BLACK-THROATED BLUE WARBLER.**—In the spring of 1917 I did not see a single one of this otherwise so common migrant. Other Warblers, such as the Blackburnian, were almost equally rare. It was that extraordinarily cold spring, when we had frosts till about the middle of June. I have no doubt whatever that there must have been a great mortality that spring among Warblers, Swallows and other purely insectivorous species, as in that memorable spring of 1907, when conditions were similar over a large part of North America.

***Dendroica p. palmarum.* PALM WARBLER.**—In the same spring this species was seen hereabouts till May 31, when five were still in my garden. This Warbler seems to me to be increasing in numbers.

***Dendroica discolor.* PRAIRIE WARBLER.**—A very rare species here. To the one recorded by Mr. Stoddard lately, I can add another, namely, one seen by Dr. A. Lewy at Tremont, in the Dunes, July 19, 1916.

***Oporornis formosus.* KENTUCKY WARBLER.**—Another exceedingly

rare species here. We saw two May 27, 1917, in a tract of moist woods, near where the Desplaines River and Drainage Canal meet.

Mimus p. polyglottos. MOCKINGBIRD.—Since the one we saw near my house May 18, 1916, I have seen no more, nor have I heard of others having seen them.

Cistothorus stellaris. SHORT-BILLED MARSH WREN.—What may almost be called a nesting colony of them is located at Mineral Springs, in the Dunes, in the same large swale where the Marsh Hawk and Henslow's Sparrow are common. May 20, 1916, I saw about fifty there; their song resembles the syllables *psit tsit tsit*, ending in a sharp, rapid trill, which sounds like the knocking together of pebbles. The Prairie Marsh Wren (*Telmatodytes palustris iliacus*) is abundant in all larger sloughs and ponds.

Sitta carolinensis carolinensis. WHITE-BREASTED NUTHATCH.—This species seems decidedly on the decrease in numbers. The last two or three years I have seen them two or three times only each year.

Baeolophus bicolor. TUFTED TITMOUSE.—This Carolinian species is common enough 40–50 miles south of Chicago, but nearer the city it is rare. It seems to make short, rambling flights north of its breeding range in winter. I have seen it in River Forest, Riverside, Cary on the Fox River, and Millers, Indiana.

Penthestes a. atricapillus. CHICKADEE.—At Mineral Springs, Indiana, I have repeatedly seen this species, as well as *Dryobates pubescens medianus*, attacking the cattail stalks of the previous season, which probably contained larvæ of some kind.

Regulus c. calendula. RUBY-CROWNED KINGLET.—In the cold spring of 1917 this species stayed here in numbers until May 17, and their fine song could be heard daily. The Golden-crowned stayed about as late too.

Sialia s. sialis. BLUEBIRD.—This most attractive member of our avifauna I have found nowhere so abundant as, I am happy to say, near my home in River Forest. And this both as breeder or migrant. A nesting box in my garden has been occupied every year since put up, and one or two broods raised. In migration there are sometimes as many as twenty-five of them in my garden alone, which is only 100 by 100 feet, but contains two bird baths. Only at Cumberland, Maryland, have I ever found them so abundant during migration as here.

GEOGRAPHICAL VARIATION IN THE SONG OF THE
RUBY-CROWNED KINGLET.

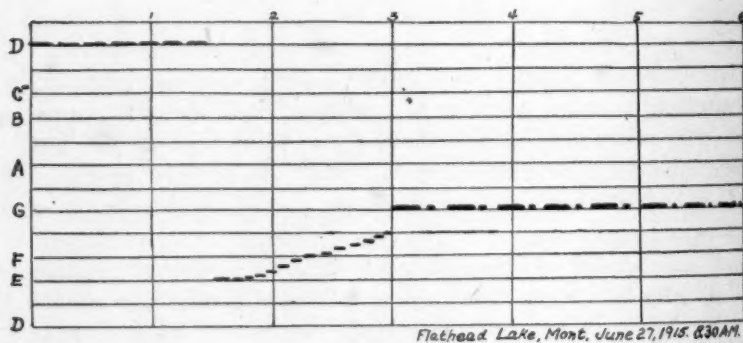
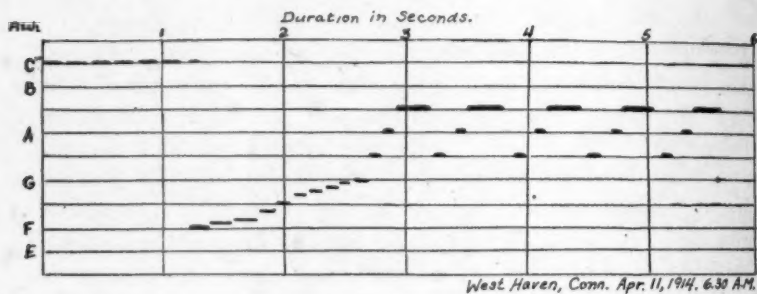
BY ARETAS A. SAUNDERS.

VARIATION in bird song may be individual, local, seasonal, or geographical. Individual variation is by far the commonest form, and is well illustrated in the Song Sparrow (*Melospiza melodia*), a bird whose song seems to hold the same general characteristics everywhere throughout its range, and yet is so variable that no two individuals ever sing exactly alike. Local variation may be found in many species. I have heard greater differences in the songs of Field Sparrows (*Spizella pusilla*) in two Connecticut localities, not more than twenty miles apart, than there is between the average Connecticut bird, and those of Pennsylvania or Alabama. Seasonal variation is well illustrated in the Blue-winged Warbler (*Vermivora pinus*), the differences between the early and late songs of this species being well known. True geographical variation, however, seems to be much rarer than the other forms. Pycraft states that such variation "has often been denied, but nevertheless . . . would seem to be true."¹ In my own experience there has come but a single certain case, that of the Ruby-crowned Kinglet (*Regulus calendula*).

I have already published some facts concerning this variation (Auk, XXVIII, p. 48, and Condor, XIV, p. 31), but wider studies since then have led me to believe the fact worthy of description in a more extended article. In general, there is a distinct, certain, and constant difference between the songs of the Kinglets migrating through eastern United States, and undoubtedly breeding in eastern Canada, and those breeding in the northern Rocky Mountains. The complete geographical limits of each form of song I am unable at present to work out. I have observed the eastern song in Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, and Alabama, and on the part of a few

¹ A History of Birds, p. 166.

migrant individuals, in Montana. The western song I have observed entirely in Montana, but since it ranges over the whole western half of the state there, extending from the Yellowstone Park to the Glacier Park, and including both sides of the continental divide, it probably covers a much greater range than this, perhaps the entire Rocky Mountain range of this species. Which



TWO SONGS OF THE RUBY-CROWNED KINGLET SHOWING
GEOGRAPHICAL VARIATION.

form the song of the Pacific coast subspecies resembles, if either, I have no means of knowing.

I have illustrated the differences in the two forms of songs by samples I have collected, recorded by the graphic method (See Auk, XXXII, p. 173) with the hope that these illustrations will make

this difference clearer than mere verbal description could. In general, the song of the Ruby-crowned Kinglet consists of three parts. The first part is a series of faint, high-pitched notes, rather squeaky in quality. The second part is much lower in pitch, sometimes more than an octave, and consists of a series of short, chatter-like notes. The pitch of these notes usually rises slightly. The third and final part of the song is the loudest and most conspicuous, as shown by the heavy lines in the record. It is in this part that the variation occurs. Eastern birds sing it as a series of triplets, the notes of each triplet rising in pitch, and the last note accented, that is, both loudest and longest in duration. Western birds sing a series of double notes, all on the same pitch, the first note of each double being the accented one. Both eastern and western birds sometimes omit the first two parts of the song, and sing the third part only. When the western bird does this the song strongly suggests a common call of the Tufted Titmouse.

Glancing at the illustrations of these two songs, the main differences in them are at once apparent to the eye, as they are to the ear, of one who listens to the singers. A more detailed examination will show other differences in these two songs, but these are differences that are merely individual. As they are not at once apparent to the eye in the illustration, so they are not noted by the ear in the field, unless one makes a careful detailed study of the song.

While there is much variation among individual Kinglets in the rendering of their songs, I have never heard a song in eastern United States that resembled that of the western bird. In the same way I have never heard a bird on the breeding grounds in the west sing in a manner resembling the song of the eastern bird. In the spring of 1910 I did hear the eastern song from a number of birds that were migrating in Silver Bow County, Montana. These birds were all in clumps of willow bushes in the Transition zone, a place where this species may be found in numbers during the migrations. But in the fir forests of the Canadian zone, where this species breeds, the birds without exception sang the song of the western bird. This same statement will apply after seven summers of experience on the breeding grounds of this species in the mountains of Montana.

To name a new subspecies on the basis of a difference in song

would be a rather novel proceeding. The difference would be fully as great and as important as the differences on which many subspecies are named today, but they would be less tangible to the collector, who in most cases would have to depend on the locality to label his subspecies. I am rather of the opinion that the Rocky Mountain birds differ slightly from the eastern ones in plumage as well as in song. The naming of a new subspecies, however, if grounds for such, based on plumage or measurements, exist, I would prefer to leave to someone who has greater opportunities to study series of skins and to work out such problems.

THE EVOLUTION OF BIRD-SONG.¹

BY FRANCIS H. ALLEN.

THE evidence and arguments brought forward by Mr. Chauncey J. Hawkins in his paper on 'Sexual Selection and Bird Song' in 'The Auk' for October, 1918, make it seem very probable that bird-song had its origin — its first cause — in the "maleness" of the males. Mr. Hawkins fails to show, however, how the multiplicity of songs of the various species of birds, the extremely elaborate songs of some, could have acquired their present forms except by some continuous selective process.

Mr. Hawkins concludes his paper by saying (following Brooks) that "any variations in voice which might arise would be preserved in the male germ which assures the variation in the species, while the germ of the female guarantees the constancy of the species." I suppose this to mean that *all* variations that have arisen in the course of the evolution of a species are present potentially in the male germ, but that some of them are inhibited by the conservative action of the female germ. This seems to be going a little beyond the evidence, and it can, I think, only be regarded as a

¹ Read, in somewhat different form, before the Nuttall Ornithological Club, May 5, 1919.

theory. As a theory it seems to be open to the fatal objection that it fails to explain the relative uniformity of bird-song within the species. If every variation has a chance of being perpetuated, what is it, precisely, that decides for or against it and reaches the same or a similar decision in all individuals of the species? Can conservatism alone do this and thus permit progress in a definite direction?

It seems to me that something more positive in the way of an evolutionary process is needed to account for the multifarious distinctive songs of birds than the unregulated inhibition of variations. Granted that the song-impulse is rooted in the superabundant vitality of the male, there must still be some process that selects the variations to be preserved — whether it be sexual selection, natural selection, or some other agency, or a combination of two or more such agencies.

As Mr. Aretas A. Saunders has pointed out ('Auk,' January, 1919, p. 149), Mr. Hawkins has failed to make careful distinction between call-notes and song. Song probably originated in the rapid repetition or special adaptation of call-notes, as Mr. Charles A. Witchell has shown in his interesting book on 'The Evolution of Bird-Song' (London, 1896), but it has assumed an entirely different function in the bird's life, and, as Mr. Witchell and others have shown, it is as a rule transmitted from generation to generation in an entirely different way. Dr. Chapman, in his comprehensive discussion of 'The Voice of Birds' in the Introduction to his 'Handbook of Birds of Eastern North America,' indorses "the theory of the mimetic origin of bird-song," and says, "Birds inherit at least the calls they utter when in the nest, just as a child cries instinctively, but they apparently do not inherit their songs any more than the child inherits the language of its parents."

Call-notes are means of identification between individuals of a species and, being necessary in order to bring the sexes together and to prevent the separation of families, they have been evolved, whether through natural selection or otherwise, to meet the needs of the several species. No one thinks of attributing them to a surplus of sexuality. The songs are similarly differentiated for purposes of identification. Doubtless some, and perhaps many, songs were evolved either through the ordinary processes of evolu-

tion, whatever they may be, or through the special process of sexual selection. The evidence, however, seems to favor the belief that most songs are transmitted from generation to generation by imitation, each individual imitating, consciously or unconsciously, the songs of other individuals, whether the songs of his parents heard while he was in the nest or those of other birds. The songs would naturally be modified and improved by enterprising and gifted singers, but would, of course, always be subject to the conservative action of the herd instinct, which would repress and suppress any too great departure from the normal. (This last observation I offer as a substitute for Mr. Hawkins's theory of the opposing influences of the male and female germs.) In this way the characteristic songs of the species are preserved, just as primitive human language passes from individual to individual within the tribe, and as the folk-songs of the various races of men have been handed down from generation to generation.

This growth and development by invention and imitation must, it seems to me, account in great measure for the *forms and general characters* of bird-songs as we know them, but surely some other process was necessary to produce the *beauties* of tone and melody and rhythm that characterize so large a percentage of the songs. Superabundant vitality produces noise in human beings and doubtless also in birds, but it cannot account for beauty, any more than it can account for the more or less intricate patterns of the vocal utterances that we call songs. Weismann remarks that "it is not easy to see why a more active metabolism should be necessary for the production of strikingly bright colours than for that of a dark or protective colour,"¹ and it would be fully as difficult, I think, to show how it could produce music out of noise. Equally impotent in this direction must be such an agency as natural selection, for obviously birds can pick up a living, escape their enemies, and propagate their kind without the help of music; many species do so. Imitation could not of itself *produce* musical qualities, and in the absence of any standards of taste it would be as likely to perpetuate harsh and unpleasing notes as beautiful ones.

All these agencies failing, unless we postulate some supernatural

¹ The Evolution Theory, English translation by J. Arthur Thomson and Margaret R. Thomson 1904, (original published in 1902), vol. i, p. 212.

force at work in the universe to produce beauty,—and that, of course, would be getting outside the realm of science,—how can we escape imputing the origin and development of this beauty in bird-song to an æsthetic sense in the birds themselves? And how can we imagine an upward evolution in the beauty of the song and the proficiency of the singer without postulating some form of selection as the active principle? Finally, is any theory more reasonable than that of sexual selection to account for the beauty of bird-song? Is there, indeed, any other workable theory left to us?

Mr. Hawkins has pretty thoroughly recapitulated the evidence in favor of the hormone theory of the origin of bird-song,¹ and I fail to find in his paper any argument that would apply against this view of the action of sexual selection in producing and developing beauty in song, except the evidence he cites that display and ardent singing serve the purpose of overcoming the coyness of the female, and that in many cases there is no indisputable evidence that the female exercises any choice between suitors (or possible suitors). This is a strong argument but not an insuperable one. For one thing, even though but one male may be seen with the female at a given time, she may nevertheless have had opportunities to choose,—just as in the human species it frequently happens that but one suitor is heard at a time! More observation is needed on this point. But many evolutionary questions must be decided by a nice balancing of evidence and arguments, and the difficulties of accounting for bird-song without admitting sexual selection as an important factor seem to be far greater than those of reconciling the latter with the theory of superabundant sexuality.

If we agree that sexual selection has thus played its part, we have, then, in addition to natural selection or whatever other evolutionary process may be the chief agency in the origin of species, these three coördinate factors in the production of bird-song: the hormones generated by the male sex glands originating the song-impulse; invention and imitation producing the variety and fixing

¹ He fails to mention a comparatively recent opinion on the other side of the question in the case of Weismann, who says in his 'The Evolution Theory,' "From [the] simple love-call the modern song of many species must have developed by means of sexual selection."

the form and character of the song; and sexual selection evolving, through both structural and psychological changes, beauty of tone and proficiency in execution.

The letter of Mr. Saunders in the January 'Auk' has suggested a further examination into the mode of development of the songs of birds. Mr. Saunders raises an interesting question in regard to the relation between the ordinary songs of certain species and the ecstatic flight-songs. He makes a radical distinction between the "ordinary song" and the "mating-song," and states that "the ordinary song is evidently not sung from sexual impulses, but is simply an outburst of vocal sounds expressing great vigor and joy of living," while "the mating-song, on the other hand, seems to be caused directly by sexual impulses," and he goes on to say, "If we would know the primary cause of bird-song in general, then the question to be solved is which of these forms of song is the more ancient." He decides this question in favor of the "mating-song," and cites as his only evidence a certain flight-song of the Eastern Meadowlark, which he says is almost identical with that of the Western species, while the ordinary songs of the two species are very different, indicating the ancestral character of this flight-song.

He describes this song as "a long-continued jumble of short, quick notes," and says that it "quite closely resembles the flight-song of the Bobolink (*Dolichonyx oryzivorus*)."

This song is also mentioned by Dr. Chapman in his "Handbook of Birds of Eastern North America" (Revised Edition, p. 64). I have never been fortunate enough to hear this song, which Dr. Chapman intimates is not very frequently uttered by our Eastern bird, and which I think, from my own experience and from inquiries I have made of other ornithologists, must be very uncommon in Massachusetts, where the "ordinary" song is certainly a mating-song, if not *the* mating-song. I should like, however, to cite a few other examples which seem to point to an opposite conclusion to that reached by Mr. Saunders as to the priority of mating-songs in general.

One of the most conspicuous examples of ecstatic flight-songs among our Eastern birds is that of the Ovenbird (*Seiurus aurocapillus*), and this song always (in my experience) contains a fragment of the ordinary song of the species interpolated among its rich, melodious warbles. Does it not appear more likely that this flight-

song has been evolved from the ordinary song, from which it has never quite succeeded in freeing itself, than that the warbling song should first have developed the *teacher teacher teacher* strain, and that then this new and comparatively uninteresting strain should have been selected to be lengthened and strengthened into the ordinary song of the species?

Another common Warbler, the Black and White (*Mniotilta varia*), possesses a song which is confined, I think, to the nesting-season, and this is so like the ordinary song of the species that the two must certainly have had a common origin. The song we first hear from newly arrived birds in the spring is a plain *wee-see wee-see wee-see wee-see*; then later we hear what is obviously the same song elaborated by lengthening the performance and lowering the pitch of two of the dissyllabic notes near the end, thus: *wee-see wee-see wee-see wee-see woo-see woo-see wee-see wee-see*. This latter song is uttered from a perch and is not an ecstatic performance like the Ovenbird's, but it is clearly a mating-song as distinguished from the ordinary song, and it is equally clearly an elaboration of that song. Of course, it may be argued that the more elaborate song is the regular one, and the other, which is heard first, is only a shortened, abortive form of it, used before the song-impulse has gained its full force; as, in the autumn, when the song-impulse is waning, we hear often only the introductory notes of the White-throated Sparrow's song; but is it not probable that in both these cases the shortened form is merely a reversion to an ancestral song, the song as it was before it was evolved into its present complete form? The ordinary course of evolution is, of course, from the simple to the complex rather than from the complex to the simple.

Again, the long-continued, richly intricate song that we hear from the Rose-breasted Grosbeak (*Zamelodia ludoviciana*) in the height of courtship excitement is obviously only an elaboration of its ordinary song.

Is it not reasonable to assume that courtship excitement should lead to a more and more elaborate form of song-expression as the development of the species goes on, and that the song of the more excited moments should always be somewhat in advance of the ordinary song in point of fervor and elaboration? This view of

the development of bird-song might be stated as follows: Let *S* represent the song first developed out of the call-notes of a certain species. *S* becomes elaborated as *SS* under stress of unusual emotion, and *SS* becoming fixed in the psychology of the species, the bird has two songs, *S* and *SS*, the latter a special mating-song uttered only at times of great sexual excitement; then *SS* tends to become the ordinary song, and a further elaboration, *SSS*, is evolved to express the unusual emotion for which *SS* is no longer adequate.

This process may go on indefinitely but so slowly that only in rare instances can we see any evidence of it. Do we not get a glimpse of it, however, in the case of the Baltimore Oriole (*Icterus galbula*)? Besides the harsh, chattering call which is suggestive of family relationships, this bird utters clear, pleasing whistles which are evidently in the nature of song-notes without amounting to actual songs. Out of these separate song-notes (*S*) has developed apparently the characteristic "ordinary song" of the Oriole (*SS*);¹ and out of this in turn has come the longer and more beautiful mating-song (*SSS*) which is so often uttered on the wing. (This is, of course, only an outline sketch of the possible development of these songs, and I do not mean to imply that there were no intermediate stages.) Here we seem to have three stages in song-development still in existence. It is conceivable that a fourth may be added in future ages and that the first or the second may eventually be dropped from the Oriole's repertoire.

Having elaborated this theory at some length, I have to confess that it remains only a theory, and I ought, perhaps, to apologize for presenting it in its present "half-baked" condition. If my presentation of it, however, leads to the presentation of further evidence or argument in favor of Mr. Saunders's view, or if some one can show that "ordinary" songs and "mating" songs originated quite independently of each other, I shall be satisfied. One objection that may be raised to the theory of progressive improvement from *S* to *SS*, etc., is, of course, the marked differences

¹ I think I am justified in speaking of the Baltimore Oriole's "ordinary song," for though the song is subject to so much individual variation that hardly any two birds sing the same tune, yet its quality is highly characteristic; it is never to be mistaken for the song of any other species with which the Oriole is commonly found, and in that sense it is a very definite entity.

between the ordinary and the mating songs, the absence of connecting links. The Baltimore Oriole's ordinary song is not merely a slight advance over the single song-notes; it is a much more elaborate performance. If the former originated in the latter, there must have been intermediate stages. What has become of these? Why have they been lost in the process of song-evolution while the single song-notes persist? Perhaps because they would represent simply an inferior form of song and would have no place in the Oriole's life, while the separate notes can be uttered easily while the bird is feeding and can be used in a sort of conversational way when he is not moved to utter a set song. There may be similar reasons for the persistence in other cases of songs which retain a place in a bird's repertoire, while other, more advanced songs have given place to still others, still more advanced.

There is another consideration. Some of the special "mating-songs" are not merely more elaborate performances than the "ordinary songs" and thus clearly an advance upon them; they are ecstatic and confused, less orderly than the every-day songs, and are interspersed with call-notes and chattering. This is the case, sometimes at least, with the Baltimore Oriole. Such a song in its present condition could hardly be expected ever to become the regular song of the species. It would need to be modified and regulated — standardized, so to speak. I see no reason why this should not happen, but neither have I any proof that it does happen. This whole question of the relation of these two types of song to each other is a complicated one, and while I do not believe that Mr. Saunders has settled it, neither do I claim to have settled it myself. It may, indeed, prove that in this, as in some other matters, no one formula will apply universally, but that the nature and origins of the mating-songs are radically different in some species from what they are in others.

I have quoted Mr. Saunders as saying that "the ordinary song [of birds possessing also a special mating-song] is evidently not sung from sexual impulses, but is simply an outburst of vocal sounds expressing great vigor and joy of living." It would be more exact to say that the ordinary song is not sung from *conscious* sexual impulses — using the word "conscious" in no strict sense, of course. Those who believe with Mr. Saunders that "sexual selection is the

primary cause of the evolution of bird-song" must agree with Mr. Hawkins that the bird's "joy of living" itself arises out of the sexual impulse, and those of us who consider the evolution of song more complex must still trace its origins back to sexuality. Even without accepting the Freudian theories in their entirety, we must recognize the power of the primary instincts, and there can be little doubt that it is the reproductive instinct that accounts for bird-song, however various were the processes through which it was evolved.

REVISION OF THE GENUS BUTHRAUPIS CABANIS.

BY THOMAS E. PENARD.

THE generic name *Buthraupis* was proposed, without designation of type, by Cabanis (Mus. Hein., i, 1850, p. 29) for *Tanagra montana* d'Orbigny and *Tanagra eximia* Boissonneau, with *Tanagra cucullata* Jardine listed as synonym of *B. eximia*. Subsequent writers have used either *T. montana* or *T. cucullata* as type of the genus. The first mention of a type, however, seems to have been by G. R. Gray (Cat. Gen. and Subgen. Birds, 1855, p. 73), who selected "*Tanagra montana* Lafr." [= *Tanagra montana* d'Orbigny, = *Aglais montana* d'Orbigny and Lafresnaye], the first species listed by Cabanis under the new genus.

As at present understood, *Buthraupis* is a composite group. Ridgway (U. S. N. M., Bull. 50, pt. ii, 1902, p. 32) has called attention to the widely differing structural characters in its members, stating, however, that on the basis of the shape of the bill alone the genus could not be subdivided without making four groups, the first to include *B. cucullata* and *B. montana*, the second *B. arcaei* and *B. caeruleigularis*, the third *B. chloronota*, and the fourth *B. eximia*. He also called attention to the very much shorter tails in the group containing *B. arcaei* and *B. caeruleigularis*, but preferred to leave the genus with the usually assigned limits.

Through the kindness of Mr. Outram Bangs, and at his suggestion, I have examined the members of this group in the Museum of Comparative Zoölogy, and Mr. W. deWitt Miller of the American Museum of Natural History, acting in Dr. Chapman's absence, has kindly lent me specimens of *B. arcæi*, *B. melanochlamys*, *B. rothschildi*, *B. edwardsi*, and *B. aureocincta*, so that altogether I have been able to see all the known forms usually included in the genus *Buthraupis*, with the exception of *B. cyanonota*, which is considered a subspecies of *B. cucullata*.

The series shows much variation, but it is easy to distinguish two sections, one containing the larger, long-tailed members, represented by *B. montana*, *B. cucullata*, *B. gigas*, *B. saturata*, *B. cyanonota* (?), *B. eximia*, and *B. chloronota*, and the other containing the smaller, short-tailed members, represented by *B. arcæi*, *B. cæruleigularis*, *B. melanochlamys*, *B. rothschildi*, *B. edwardsi*, and *B. aureocincta*. The first section may be further subdivided into two groups, on the basis of decided differences in shape of bill and form of wing, the first group containing the longer-billed members with more pointed wings, the second group containing the shorter-billed members with less pointed wings. The second section containing the smaller forms, although fairly uniform in structural proportions, shows some differences in details which may eventually prove to be of more than specific importance.

Below are given the generic characters of the three groups which I think should be recognized:

***Buthraupis* Cabanis.**

Type.—*Tanagra montana* d'Orbigny [= *Aglaia montana* d'Orbigny and Lafresnaye] by subsequent designation — G. R. Gray, 1855.

Characters.— Bill short and heavy; length of maxilla from nostril less than one half the length of the tarsus, and a little more than one half the distance from angle of mouth to tip; depth equal to width at base or slightly greater, and equal to length of maxilla from nostril; culmen convex, sometimes more strongly curved towards the tip, the terminal portion produced into a distinctly uncinat point, behind which there is a distinct tomial notch; gonys about equal to length of maxilla from nostril, not decidedly shorter, gently convex, ascending, contracted and ridged terminally; commissure slightly sinuated; nostril exposed, nearly circular. Wing long,

from four to four and one half times the length of the tarsus; rather pointed, second (from outside) to sixth primaries longer than the first, which is decidedly short but longer than the seventh; third (or fourth) primary longest; primaries exceeding secondaries by more than or about two thirds the length of the tarsus. Tail from two thirds to three fourths the length of the wing; slightly rounded, the rectrices broad with rounded tips. Tarsus longer than the middle toe with claw; lateral claws reaching to or slightly beyond base of middle claw.

The genus, as now restricted, includes the following species and subspecies:

Buthraupis montana (d'Orbigny and Lafresnaye).

Buthraupis cucullata cucullata (Jardine).

Buthraupis cucullata gigas (Bonaparte).

Buthraupis cucullata saturata Berlepsch and Stolzmann.

Buthraupis cucullata cyanonota Berlepsch and Stolzmann.

Cnemathraupis gen. nov.

Type.—*Tanagra eximia* Boissonneau.

Characters.—Bill similar to that of *Buthraupis*, but shorter; width at base less than depth and about equal to, length of maxilla from nostril; length of maxilla from nostril about equal to or less than one half the distance from angle of mouth to tip; gonys strongly ascending and ridged terminally; nostril less exposed than in *Buthraupis*. Wing not so long as in *Buthraupis*, very little more than three and one half times the length of the tarsus; not so pointed, second (from outside) to seventh primaries longest, the first longer than the eighth (or ninth). Tail comparatively longer than in *Buthraupis*, from three fourths to four fifths the length of the wing.

The following forms are included in this genus:

Cnemathraupis eximia eximia (Boissonneau).

Cnemathraupis eximia chloronota (Sclater).

Remarks.—Ridgway (*l. c.*) has suggested that the ridged condition of the gonys might be of generic importance. This character, however, is found to be rather variable, being more pronounced in some specimens of *C. e. chloronota* than in others. A specimen of *C. e. chloronota* in the Museum of Comparative Zoölogy (M.C.Z.

124900) certainly has this ridge fully as much developed as in a specimen of *C. e. eximia* (Bangs coll. 1448), although in general the ridge is more distinct in *C. e. eximia*. Some specimens of *B. c. cucullata* also exhibit this character strongly. The two forms, *C. e. eximia* and *C. e. chloronota*, very probably intergrade, and are considered geographical races by Chapman (Bull. Am. Mus. Nat. Hist., xxxvi, 1917, p. 603).

Bangsia gen. nov.

Type.—*Buthraupis arcæi cæruleigularis* Cherrie.

Characters.—In general resembling *Buthraupis*, but differing considerably in shape of bill and form of wing. Bill rather long and comparatively slender; depth at base about equal to width and to gonys (in this respect resembling *Buthraupis*), but decidedly less than length of maxilla from nostril. Wing long, about four times the length of the tarsus; more pointed than in *Buthraupis*, third primary (from outside) longest, the first very little shorter than the third and longer than the fifth (or sixth?); primaries exceeding secondaries by about the length of the tarsus. Tail comparatively much shorter than in *Buthraupis*, about one half or a little more than one half the length of the wing; slightly rounded or nearly square (slightly forked in *B. a. cæruleigularis*), not so decidedly rounded as in *Buthraupis*.

The following species and subspecies should be referred to this genus:

Bangsia arcæi arcæi (Sclater and Salvin).

Bangsia arcæi cæruleigularis (Cherrie).

Bangsia melanochlamys (Hellmayr).

Bangsia rothschildi (Berlepsch).

Bangsia edwardsi (Elliot).

Bangsia aureocincta (Hellmayr).

Remarks.—It gives me great pleasure to dedicate this well-marked genus to Mr. Outram Bangs.

I have seen only one specimen each of *B. melanochlamys*, *B. rothschildi*, and *B. edwardsi*, and two of *B. aureocincta*. In all these the bill seems to be a little heavier than in *B. a. arcæi* and *B. a. cæruleigularis*, especially the latter, and the fifth primary is longer

than the first. The distance from the secondaries to the tip of the longest primary also appears to be comparatively much shorter than the length of the tarsus, but the condition of some of the specimens was such that reliable conclusions could not be drawn, and more material would have to be examined to determine the exact interrelationship of these forms.

In selecting as type *B. a. caeruleigularis* rather than the earlier form, *B. a. arcæi*, I have been influenced by the condition of the material at hand. The only specimen of an otherwise fine specimen of *B. arcæi* before me has a slightly imperfect tail, which, however, appears to be rounded instead of forked.

DESCRIPTIONS OF THREE NEW SOUTH AMERICAN BIRDS.

BY CHARLES B. CORY.

Automolus leucophthalmus bangsi subsp. nov.

Type from São Amaro, a few miles from the city of Bahia, eastern Bahia, Brazil. Adult female, No. 50573, Field Museum of Natural History. Collected by R. H. Becker, October 9, 1913.

Description.—Similar to the type of *Automolus leucophthalmus leucophthalmus* (Wied) (type examined) from the interior of southern Bahia, but differs in having the upper parts more brownish rufous, rump and tail decidedly darker (more rusty chestnut and less rufous), and sides of body and flanks more tinged with olivaceous.

Measurements.—Wing, 89; tail, 85; bill, 20 mm.

Remarks.—Six specimens examined from the coast region of Bahia.

Xiphocolaptes bahia sp. nov.

Type from Macaco Secco, near Andaraí, central Bahia, Brazil. Adult male, No. 50698, Field Museum of Natural History. Collected by R. H. Becker, October 20, 1913.

Description.—Adult male, ground color of crown dark brown, the feathers with shaft stripes of pale tawny rufous; back olive brownish, the feathers with fine shaft streaks of buffy white; wing coverts and exposed portion of primaries and secondaries (outer edges only with closed wing) olive brownish like the back; throat plain buffy white; lores, suborbital region; and ear coverts buffy; breast olive brownish, the feathers with broad, longitudinal buffy white stripes which are not bordered with dusky; abdomen and under tail coverts pale olive brown, the middle abdomen spotted as in *promeropirhynchus*, but dark spots paler and confined to the middle abdomen; bill entirely black.

Measurements.—Wing, 132; tail, 110; tarsus, 27; bill, 45 mm.

Remarks.—Allied to *X. p. promeropirhynchus* (Lesson), but coloration of crown, back, and under parts quite different.

***Dendrocolaptes picumnus cearensis* subsp. nov.**

Type from Jua, near Iguatu, Ceara, Brazil. Adult male, No. 50727, Field Museum of Natural History. Collected by R. H. Becker, August 25, 1913.

Description.—Similar to *D. p. intermedius* Berlepsch from Bahia and central Brazil, but differs in having the general plumage more tinged with tawny, and the upper parts and under parts more tawny olive; upper tail coverts brighter rufous; stripes on crown and breast more tawny (less whitish).

Measurements.—Wing, 125; tail, 120; bill, 35 mm.

THE RELATIONSHIP OF THE GULLS KNOWN AS *LARUS FUSCUS* AND *LARUS AFFINIS*.

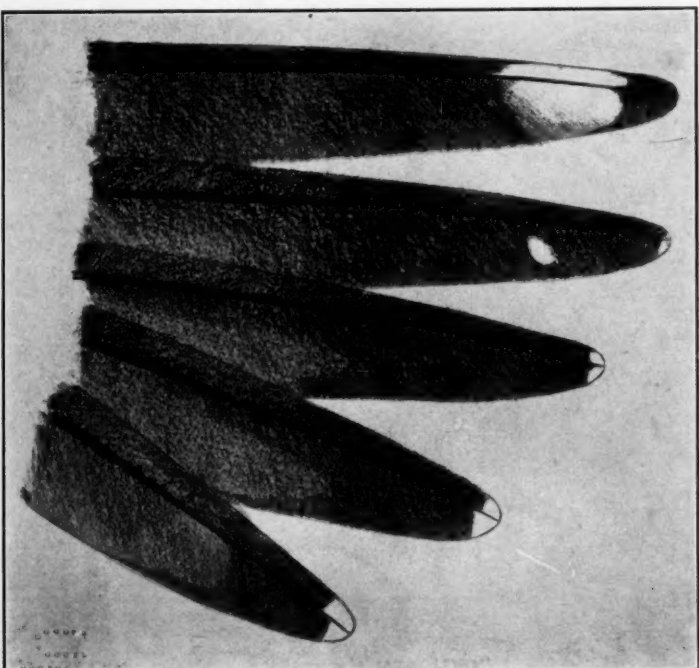
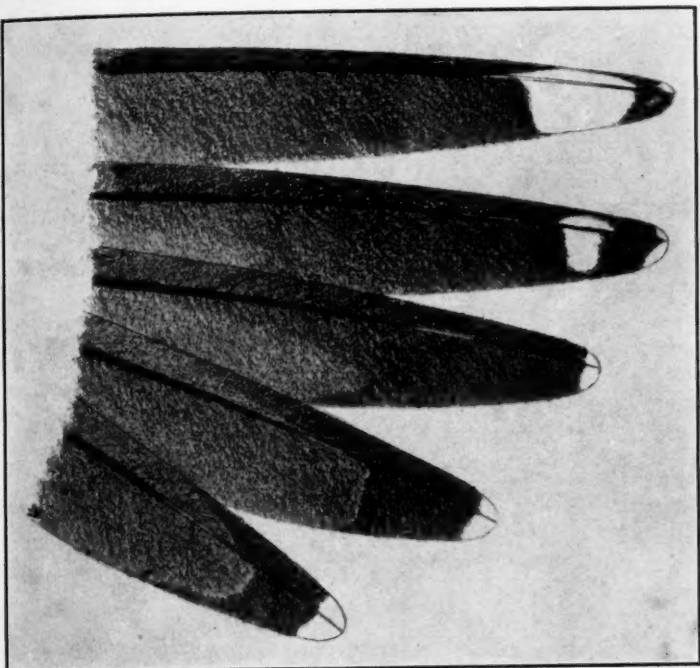
BY JONATHAN DWIGHT, M. D.

Plates XX and XXI.

IN approaching many of the problems in modern systemic ornithology, one is confronted with the necessity of steering a middle course between the Scylla of imperfect knowledge on the one hand and the Charybdis of nomenclature on the other. Either may bring us to shipwreck; but mindful of those who have preceded me in writing about the Lesser Black-backed Gull (*Larus fuscus*), and the Siberian Gull (*Larus affinis*), I venture with some hesitancy to take up the tangled question of the relationship of these birds and make another endeavor to fix the proper names upon them.

Larus fuscus, an abundant European species, was described in 1758 by Linnæus, and has never been taken on the American side of the Atlantic. *L. affinis*, however, has stood as a North American species in the A. O. U. 'Check-Lists' on the strength of a single specimen, the type taken in southern Greenland and described by Reinhardt in 1853 (Videnskab-Meddel., p. 78).

Until 1912 these two gulls were recognized as two full species, and then Lowe (Brit. Birds, VI, no. 1, June 1, 1912, pp. 2-7, pl. 1) started the ball rolling by restricting the name *fuscus* to Scandinavian birds and describing the paler bird of the British Isles subspecifically as *britannicus*. A few months later Iredale (Brit. Birds, VI, no. 12, May 1, 1913, pp. 360-364, with pl.), borrowing the type of *affinis* from the Copenhagen Museum, where it had rested for half a century, and comparing it with British specimens, found it to be identical with them; but not content with synonymizing *britannicus* with *affinis*, he reached the conclusion that the Siberian bird was larger and therefore required a new name — *antehius*. In 1915 Buturlin (Mess. Orn. VI, no. 12, 1915, p. 149) scored Iredale for not providing either type or type locality for *antehius*, and went on to say that he himself had given the name *Larus*



LARUS VUSCUS AFFINIS.

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affinis taimyrensis in 1911 (Mess. Orn., 2d year, no. 2, 1911, p. 149) to the Eastern race, and therefore the Western race must be known as *Larus affinis antelius*. Buturlin says, (translated from the Russian) "As the name '*affinis*' now is proved to belong to another species (no intergradation is known or is likely to exist between the Lesser Black-backed and Siberian Herring Gulls), the Eastern race of the Siberian Herring Gull must bear the name *Larus taimyrensis taimyrensis*, Buturl., 1911, and the Western race *Larus taimyrensis antelius*, Iredale, 1913."

It is at this point I purpose taking up the question which resolves itself into two parts, one, ornithological, concerning the relationship of the gulls under discussion, the other, nomenclatural, concerning the names to be used. At least I may contribute information that I have acquired from the examination of considerable material available in this country. Briefly then I may state that the specimens I have brought together confirm Mr. Lowe's claim that there are two intergrading forms of the Lesser Black-backed Gull, one with a brownish black back or mantle that breeds in Scandinavia and probably southward and another with a paler, slaty mantle that breeds in northern England, Scotland, the adjacent islands, and on the northern coast of Russia. But as for names, there is an extensive literature bearing upon this Gull and it is perhaps worth while to outline the history of some of the names that have been used.

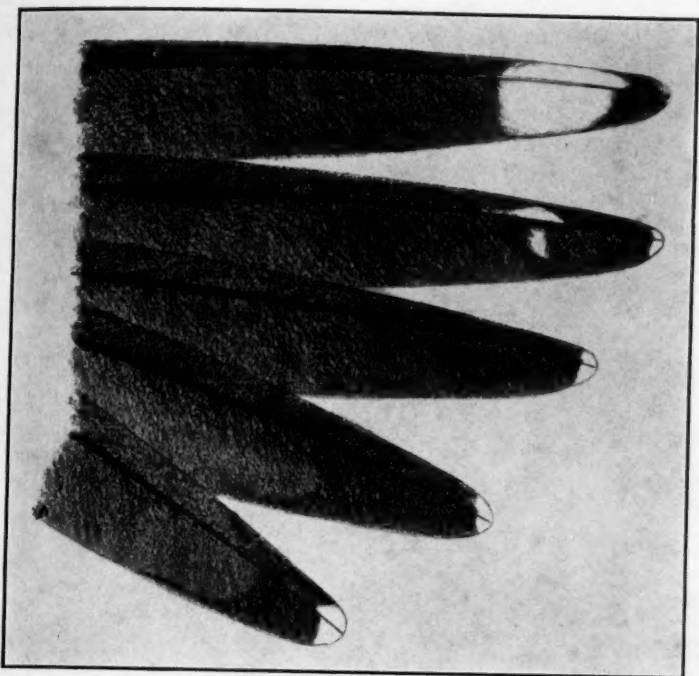
Linnæus (Syst. Nat. ed. 10, 1758, I, p. 136) first described *Larus fuscus* as "*L. albus dorso fusco*" (*i. e.*, white gull with swarthy back), and in his ed. 12, 1766, p. 225, added "*Rostrum Pedesque flavi*" (*i. e.*, bill and feet yellow). This name prevailed until Meyer and Wolf (Naturg. Vög. Deutschl., II, 1805, p. 32, col'd pl.) substituted *Larus flavipes*, but their description, "back and upper side of wings brownish black," is evidently that of *fuscus*, and their plate is that of a bird with the back almost black. Meyer and Wolf (Taschenb. Deutsch. Vögelkunde, II, 1810, pp. 469-471, col'd frontisp.) again made use of *Larus flavipes*, repeating virtually the old description, and the plate, now smaller, is clearly that of a black-backed bird. Curiously enough, at p. 471 they say in conclusion, "The name which Linnæus applies to this Gull (if it is other than his *Larus fuscus*) does not fit very well, for the back

and wing coverts are not *fuscus* (aschengraubraun) [*i. e.*, ashy gray brown] but brownish black (braunlichschwarz)." The question may well be asked what did Linnæus mean by *fuscus* and what value should be attached to the remark of Meyer and Wolf? While Linnæus, perhaps, has used *fuscus* rather loosely in his descriptions, he surely would not have applied it to the light slaty backed form; and Meyer and Wolf evidently did not have the courage of their convictions, for they described and figured *fuscus*. Meisner and Schinz (Vög. Schweiz, 1815, p. 276) make use of *Larus flavipes* and so does Meyer (Kurze Beschs. Vög. Liv. u Esthl. 1815, p. 231), Vieillot (Encyc. Méthod. I, 1823, p. 346; Faune franç. Ois., 1828?, p. 394), Lesson (Traité, 1831, p. 617), and Temminck (Man. Orn. 2d ed., 4th pte., 1840, p. 471), but all of these writers seem to refer without question to *fuscus*. As for *Larus cinereus* (Leach, Syst. Cat. Mam., etc., 1816, p. 40), it would be a difficult matter to allocate this name. As early as 1822 Brehm and Schilling (Beitr. zur Vögelkunde, III, pp. 735 +) gave elaborate descriptions of the plumages of the Gulls, but apparently confused the black-backed species under "*maximus*" and "*marinus*." Later Brehm (Isis, XXIII, 1830, p. 993, and Handl. Naturg. Vögel. Deutschl., pp. 746-750) recognized three species of the "Laroidæ harengorum (*Larus fuscus*)," viz., *melanotos*, *harengorum*, and *fuscus*, saying that they all have a very dark mantle, and using the term slate-back ("*schieferschwarz*") to describe it, so here again it is evident that these names are pure synonyms of *fuscus*.

Next in point of time is Macgillivray (Man. Brit. Orn., 1842, pt. II, p. 245), who, in describing "*Larus flavipes*, Yellow-footed Gull," says in part, "the back and wings blackish-gray tinged with purple or dark slate coloured." This description of the British bird applies to the form that Lowe called *britannicus*, which has proved to be Reinhardt's *affinis*, and it would be most appropriate to use "Yellow-footed Gull" for the popular name.

Summing up, then, the first available scientific name for the grayer-backed bird is *affinis* of Reinhardt, and as there is complete intergradation of every character between *affinis* and *fuscus* there can be no question of two species.

The skins I have examined show a little difference in the size of birds of the two races, although the difference in color of the mantles



LARUS FUSCUS FUSCUS.

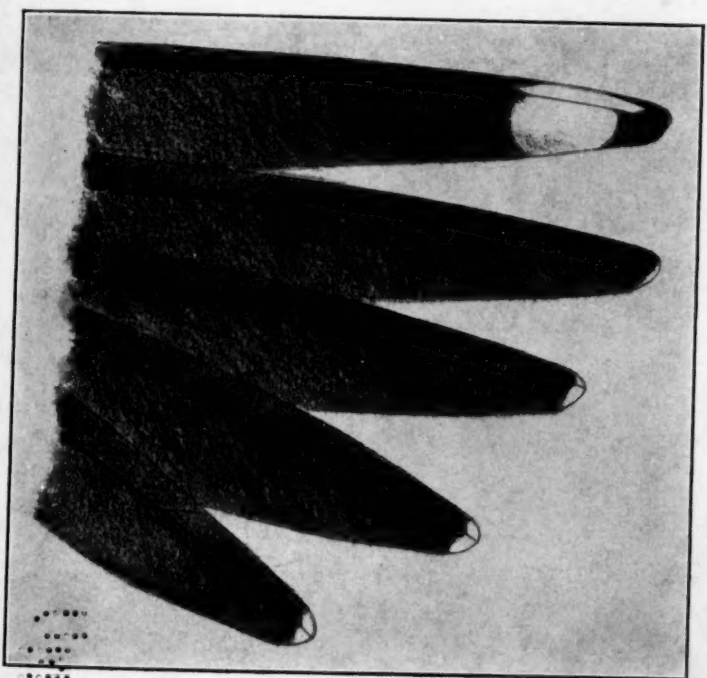


PLATE XXI.

1000
1000
1000
1000
1000

is usually diagnostic. I would also call attention to another neglected character quite as good as any only less obvious, and that is the wing pattern.

In the adults of *fuscus*, three or four of the distal primaries are black, the fifth usually being the first to show a pattern which is in the nature of a gray wedge (Plate XXI), while in *affinis* the gray wedges begin on the first or second primary (Plate XX). As a rule the wedges in *fuscus* are rather obscure and in color much like the mantle, while in *affinis* the wedges and the color are both clearly defined; that is to say, the dark bird has a dark pattern, the lighter bird a lighter one. Saunders (Brit. Mus. Cat. XXV, 1896, p. 253) noticed these differences and yet he did not rightly appraise them, and being a binomialist he allowed "*affinis*" to stand as a full species, although he was fully alert to the facts and saw the close relationship. My material from Russia is limited to one specimen, so I do not feel competent to pass judgment on "*taimyrensis*" of Buturlin, which may perhaps be worth recognizing as a large geographical race. One needs to be very sure Gulls are sexed correctly if they are to be separated on size alone, for while females are regularly smaller in dimensions than males, particularly noticeable in the bills, there is always an overlapping of large females and small males. Buturlin's position that *fuscus* is a separate species is not well taken, although it is rather a curious distribution by which the dark mantled form of Scandinavia thrusts itself between the gray mantled form breeding to the west of it and to the east as well. The specimens I have examined measure as follows:

***Larus fuscus fuscus* Linnaeus.**

10 adult males, wing 415-438 (423), tail 152-169 (160) tarsus 58-66 (63.6), toe without claw, 45-52 (49.1), culmen, 49-55 (52), depth of bill at base, 15-18 (16), at angle, 16-19 (16.5).

5 adult females, wing 394-410 (400.8), tail 142-159 (149.8), tarsus 57-60 (58.8), toe without claw, 42-47 (45), culmen, 45-48 (46.2), depth of bill at base, 14-16 (14.9), at angle, 15-17 (15.7).

Larus fuscus affinis Reinhardt.

10 adult males, wing 394-428 (412.3), tail 152-167 (160.3), tarsus 63-69 (65.9), toe without claw, 47-53 (50.3), culmen, 49-56 (52.9), depth of bill at base, 16-19 (17.3), at angle, 16-19 (17.8);

4 adult females, wing 382-407 (392.2), tail 151-158 (155.7), tarsus 57-66 (61), toe without claw, 42-51 (45.5), culmen, 44-50 (47.5), depth of bill at base, 14-15 (14.7), at angle, 15-16 (15.7).

**FORSTER'S EDITION OF LEVAILLANT'S "OISEAUX
D'AFRIQUE."**

BY CHARLES W. RICHMOND.

PUBLICATION of Levaillant's celebrated 'Histoire Naturelle des Oiseaux d'Afrique' was begun in Paris in 1796, and completed in six volumes in 1808. It was issued in folio, with two sets of plates, black and colored, also in 4°, with colored plates, and in 4°, with plain plates; there was also an edition in 12mo of two volumes.

In 1797 Bechstein began at Nürnberg a translation under the title 'Franz Le Vaillant's Naturgeschichte der Afrikanischen Vögel,' but it was discontinued at the end of the "Erster Band" in 1802. It consisted of 8 parts, each with 6 plates and corresponding text; in all 48 plates, with pages i-xii, 13-210, 4°. It is uncommon, though met with occasionally in the second-hand book catalogues. Additional matter by Bechstein is given in footnotes, but this is of little interest concerning nomenclature, since the translator did not give any new scientific names to the species, except possibly that of *Falco lagopus* Varietas *africana*, described on p. 96 (note).

A very little known translation was begun in Halle in 1798 by a publisher named Dreyssig, who secured the cooperation of J. R.

Forster, already the translator into German of one of Levaillant's voyages to Africa. The Halle edition is very rare, and for nearly a century has remained almost unnoticed by ornithologists, though one or more of the new names given by Forster were cited in one of F. Boie's papers in Oken's *Isis* about 1820-26. It was omitted in Engelmann's *Bibliotheca Hist. Nat.* of 1846, but is mentioned, apparently at second hand, in the continuation by Carus and Engelmann, where the date is given as 1798. Suckow, in 1800, also quotes it as 1798, but his reference to it suggests that the work was autographically unknown to him, since he mentions none of the new names introduced by Forster. Sherborn was unable to find a copy when compiling his 'Index Animalium,' though it is duly listed among his "libri desiderati." Thus the case remained until 1905, when the writer had the good fortune to obtain a copy from a dealer in Leipzig. This copy has an engraved title page, in script style, running as follows: F. le Vaillant's | Naturgeschichte | der | Africanischen Vögel | mit | Anmerkungen | von | D. Johann Reinhold Forster. | No. 3 [illustration of the "Undatus"] | Halle | bei Fried. Christoph Dreyssig. | The size is small octavo. There is no printed title page in this copy, and the plates are uncolored. Following the title is a "Nachricht an die Käufer" (pp. iii-vi), signed by Dreyssig, and a "Vorrede" (pp. vii-xiv), with a "Nachschrift" (p. xv), the latter signed by Forster. On the back of page xv is an "Inhalt," giving a list of the 18 plates, with a reference to the pages on which the subjects are treated. The plates are listed in three groups: Nos. 1-8 are "Raubvögel," the species of which are introduced without generic names; Nos. 9-14 are "Geyer," for which the generic name *Vultur* is used; Nos. 15-18 are "Von den Bussarten," or species of "*Falco*." Pages 1-64 constitute the remainder of the text, with the plates inserted at their proper places. There is no plate 3, as this subject is shown on the engraved title page.

Recently the writer secured a second copy¹ through the kind offices of Dr. T. S. Palmer (who obtained it from a Philadelphia book shop), which, upon comparison with the first, proved to be a colored edition (the illustration on the engraved title being

¹ Both copies are now in the library of the U. S. National Museum.

also colored), having a printed title page in addition to the engraved one. This reads: F. le Vaillant's | *Naturgeschichte* | der | afrikanischen Vögel | mit Anmerkungen | von | D. Johann Reinhold Forster. | — | Erstes Bändchen mit 18 Kupfern | Halle, | bey Friedrich Christoph Dreyssig. | On the back of the printed title is given a list of 35 book dealers, in as many places, chiefly, though not all, in Germany, from whom the book could be obtained, ending with the statement that it could be procured from any book dealer in Germany. The publisher intended to issue a part every few months, but the death of Forster, on December 9, 1798, probably caused the project to be abandoned, since no further installments were published. In addition to the two styles described above, the publisher referred to a third, more fully colored edition, that could be supplied at a somewhat higher price.

A list of the species figured and described, with the names given by Forster and Levaillant, and the pages on which they occur, is added, together with the equivalent names of Daudin and earlier writers.

"Raubvögel."

- | | |
|-------------------------------------|---|
| Pl. 1. <i>Harpacter</i> . Griffard. | p. 1. <i>Falco bellicosus</i> Daudin, 1800. |
| 2. <i>Eulophos</i> . Huppard. | 7. <i>F. occipitalis</i> Daudin, 1800. |
| 3. <i>Undatus</i> . Blanchard. | 10. <i>F. coronatus</i> Linnæus, 1766. |
| 4. <i>Vociferator</i> . Vocifer. | 14. <i>F. vocifer</i> Daudin, 1800. |
| 5. <i>Ichthyotheres</i> . Blagre. | 18. <i>F. leucogaster</i> Gmelin, 1788. |
| 6. <i>Cafer</i> . Caffre. | 23. <i>F. vulturinus</i> Daudin, 1800. |
| 7, 8. <i>Platages</i> . Bateleur. | 25. <i>F. ecaudatus</i> Daudin, 1800. |

"Geyer."

- | | |
|--|---|
| Pl. 9. <i>Vultur Tracheliotos</i> . Oricou. | p. 29. <i>Vultur tracheliotus</i> Forster, 1791. ² |
| 10. <i>V. Coprotheres</i> . Chassefiente. | 35. <i>V. kolbii</i> Daudin, 1800. |
| 11. <i>Vultur indus</i> . ¹ Chaugoun. | 40. <i>V. bengalensis</i> Gmelin, 1788. |
| 12. <i>Vultur sinensis</i> . Chincou. | 42. <i>V. monachus</i> Linnæus, 1766. |
| 13. <i>Vultur Papa</i> L. Roi des Vautours. | 48. <i>V. papa</i> Linnæus, 1758. |
| 14. <i>Vultur Hierax</i> . Ourigourap. | 50. <i>V. percnopterus</i> Linnæus, 1758. |

¹ *Vultur indus* Forster, 1795 (Faunula Indica, p. 5), is an emendation of *Vultur indicus* Scopoli, 1786, and refers to another species.

² Also *Vultur auriculatus* Daudin, 1800.

"Von den Bussarten."

- Pl. 15. *Falco Bassus*. Bacha. p. 55. *Falco bacha* Daudin, 1800.
16. *F. Rufofuscus*. Rounoir. 59. *Buteo jakal* Daudin, 1800.
17. *F. Rufocanus*. Rougre. 62. *Falco desertorum* Daudin,
1800.
18. *Falco ocreatus*. Buse gantée. 63. *F. lagopus* Gmelin, 1788.

The specific names given to nos. 10, 15, 16, and 17 appear to be the earliest for their respective species, and should be adopted.

NOTES ON THE RACES OF *QUISCALUS QUISCALUS* (LINNÆUS).

BY HARRY C. OBERHOLSER.

ACCORDING to the views of current authors there are three subspecies of our common Grackle, *Quiscalus quiscula* (Linnæus). Since, as Mr. A. T. Wayne has recently shown,¹ the *Gracula quiscula* of Linnæus² is properly applicable to the Florida Grackle (*Quiscalus quiscula aglaeus*), and the Purple Grackle needs another name, it may be worth while to present a few notes on all the forms of the species, with a revised statement of the geographic distribution of each.

Quiscalus quiscula quiscula (Linnæus).

[*Gracula*] *quiscula* LINNÆUS, Syst. Nat., ed. 10, I, 1758, p. 109 (based on *Monedula purpurea* Catesby, Nat. Hist. Carolina, Florida, and Bahama Islands, I, 1731, p. 12, pl. XII; and *Merops niger, viridi-argentea* Brown, Nat. Hist. Jamaica, 1756, p. 476) ("Habitat in America septentrionali").

[*Oriolus*] *ludovicianus* GMELIN, Syst. Nat., I, i, 1788, p. 387 (based on *Cassique de la Louisiane*, Buffon, Hist. Nat. des Ois. [original edition], III, p. 242; Planch. Enlum., No. 646) (partial albino) (Louisiana).

¹ The Auk, XXXV, No. 4, October, 1918, p. 440.

² Syst. Nat., ed. 10, I, 1758, p. 109.

Sturnus quiscula DAUDIN, *Traité Élém. et Compl. d'Ornith.*, II, 1800, p. 316 (= *Gracula quiscula* Linnæus).

Gracula quiscula WILSON, *Amer. Ornith.*, III, 1811, p. 44, pl. XXI, fig. 4 (= *Gracula quiscula* Linnæus).

Quiscalus versicolor VIEILLOT, *Nouv. Dict. d'Hist. Nat.*, XXVIII, 1819, p. 488 (Greater Antilles to Hudson Bay) (nom. nov. pro *Gracula quiscula* Latham; *Ind. Ornith.*, I, 1790, p. 191, quæ *Gracula quiscula* Linnæus).

Qu[iscula]. nitens LICHTENSTEIN, *Verz. Doubl.*, 1823, p. 18 (nom. nov. pro *Gracula quiscula* Linnæus et *Sturnus quiscula* Daudin).

Qu[isculus]. purpureus STEPHENS, in Shaw, *Gen. Zool.*, XIV, pt. 1, 1826, p. 48 (based on *Gracula "quiscula"* [= *quiscula*] Shaw, *Gen. Zool.*, VII, 1809, p. 458 [= *Gracula quiscula* Linnæus]; and on Wilson, *Amer. Ornith.*, III, p. 44, pl. XXI, fig. 4) ("South" [= North] America).

Quiscalus purpuratus SWAINSON, *Anim. in Menag.*, 1838, p. 298 (North America).

Quiscalus aglæus BAIRD, *Amer. Journ. Sci. and Arts*, ser. 2, XLI, 1866, p. 84 (based on *Quiscalus baritus* Baird, *Rep. Explor. and Surv. R. R. Pac.*, IX, 1858, p. 556; Cape Florida, Florida).

Qu[isculus]. versicolor typicus RIDGWAY, *Bull. U. S. Nat. Mus.*, No. 50, pt. II, 1902, p. 217 (Sclater MS.) (in synonymy).

CHARS. SUBSP.—Size small; back, scapulars, and lower parts nearly uniform dull olive or bottle green.¹

TYPE LOCALITY.—Coast of South Carolina.²

GEOGRAPHIC DISTRIBUTION.—Resident in the southern part of the southeastern United States. Breeds north to the coast of South Carolina, southern Georgia, southern Alabama, and southern Mississippi; west to eastern Louisiana; south to the coast of the Gulf of Mexico, from eastern Louisiana to southern Florida; and east to the Atlantic coast of Florida, Georgia, and South Carolina.

REMARKS.—The individual variation in this race is not nearly so great as in the form of the species breeding in the Middle Atlantic States. Its usual coloration is much like the dark green-backed phase of the latter. It has, however, what might be considered two phases of plumage, in one of which the head is bluish, especially anteriorly, in the other purplish; the head is apparently very rarely, if ever, green. In some specimens the median posterior lower parts show some blue or purplish; and the upper parts are occasionally more or less obscurely barred with the same, particularly on the posterior portion. These variations are, of course,

¹ For measurements of this race, cf. Ridgway, *Bull. U. S. Nat. Mus.*, No. 50, pt. II, 1902, pp. 217-218.

² Designated by Wayne, *The Auk*, XXXV, No. 4, October, 1918, p. 440.

in the direction of the common Purple Grackle, but are never so pronounced as in that form.

From the data given by Mr. Wayne,¹ there seems to be no doubt of the correctness of his conclusions regarding the proper application of the name *Gracula quiscula* Linnæus to the bird commonly called *Quiscalus quiscula aglæus* Baird. As Mr. Wayne has shown, the *Gracula quiscula* of Linnæus² was based chiefly on Catesby's *Monedula purpurea*, "the Purple Jack Daw."³ In determining to which of the subspecies this description of Catesby's applies, we can get no assistance whatever from Catesby's figure, and we are obliged, therefore, to determine its application by the text. This, again, is not very satisfactory, but in view of the fact, brought out by Mr. Wayne, that the Purple Grackle is almost unknown in the coast region of South Carolina where Catesby's work was done, and where, as his text indicates, he observed the birds from which his figure was drawn, it would seem improper to fix the name on any other than the breeding bird of this region. This involves, of course, the relegation of *Quiscalus aglæus* Baird to synonymy, since the latter name thus applies to the same bird as *Gracula quiscula* Linnæus. The *Merops niger, viridi-argentea* of Brown,⁴ which Linnæus cites in his synonymy, and which is, of course, *Holoquiscalus jamaicensis* (Daudin), may properly be ignored in this connection, since it clearly does not figure in either Linnæus' diagnosis or his comments.

The *Gracula quiscula* of Wilson⁵ is merely a misspelling of *Gracula quiscula* Linnæus, as is shown by the synonymy quoted; and the same applies to *Sturnus quiscula* Daudin.⁶ The *Quiscalus versicolor* of Vieillot⁷ is merely a new name for *Gracula quiscula* Latham (= *Gracula quiscula* Linnæus), as the synonymy and range (Greater Antilles to Hudson Bay) clearly indicate. Lichtenstein's *Quiscalus nitens*⁸ is merely a new name for *Gracula quiscula* Linnæus and *Sturnus quiscula* Daudin, and is, of course, of identical

¹ Loc. cit.

² Syst. Nat., ed. 10, I, 1758, p. 109.

³ Nat. Hist. Carolina, Florida, and Bahama Islands, I, 1731, p. 12, pl. xii.

⁴ Nat. Hist. Jamaica, 1756, p. 476.

⁵ Amer. Ornith., III, 1811, p. 44, pl. XXI, fig. 4.

⁶ Traité Élém. et Compl. d'Ornith., II, 1800, p. 316.

⁷ Nouv. Dict. d'Hist. Nat., XXVIII, 1819, p. 488.

⁸ Verz. Doubl., 1823, p. 18.

application. The *Quiscalus purpureus* of Stephens¹ is based on the *Gracula quiscula* of Shaw,² and on Wilson's *Gracula quiscula*,³ both of which are, of course, the same as *Gracula quiscula* Linnæus. Also, *Quiscalus purpuratus* Swainson,⁴ if, indeed, applicable to this species, must be considered a synonym of *Gracula quiscula* Linnæus. The case of *Quiscalus versicolor typicus* is, however, somewhat more complicated. This name was first used by Dr. Sclater,⁵ not as a subspecific name, but to indicate the typical form of *Quiscalus versicolor* [i. e., *Quiscalus quiscula*], as was the common practice at that time, instead of repeating the specific name as we do now, and, therefore, cannot be considered to have nomenclatural status as a subspecific designation. Moreover, Sclater includes in the range of his *Quiscalus versicolor typicus* part of the range of the southern bird, and further indicates by his text that he did not intend the subspecific term "*typicus*" as a new name, but merely to indicate the typical form of the species as distinguished from the two other subspecies.⁶

Mr. Ridgway,⁷ however, has cited it in his synonymy of *Quiscalus quiscula quiscula* as though it had regular standing, so the name, consequently, must date from his introduction, and become a synonym of *Gracula quiscula* Linnæus.

From the above discussion it is seen that all the names applied to birds from the southeastern United States are clearly referable to the Florida race heretofore called *Quiscalus quiscula aglæus*, but which now must stand as *Quiscalus quiscula quiscula*, and that the bird heretofore known as *Quiscalus quiscula quiscula* must have a new name.

Quiscalus quiscula ridgwayi, nom. nov.⁸

- *Quiscalus quiscula quiscula* Auct., nec Linnæus.

CHARS. SUBSP.—Similar to *Quiscalus quiscula quiscula*, but larger,

¹ In Shaw, Gen. Zool., XIV, pt. 1, 1826, p. 48.

² Gen. Zool., VII, 1809, p. 458.

³ Amer. Ornith., III, 1811, p. 44, pl. XXI, fig. 4.

⁴ Anim. in Menag., 1838, p. 298.

⁵ Cat. Birds Brit. Mus., XI, 1886, p. 394.

⁶ Cat. Birds Brit. Mus., XI, 1886, pp. 394-395.

⁷ Bull. U. S. Nat. Mus., No. 50, pt. II, 1902, p. 217.

⁸ I take pleasure, as a slight token of affection and esteem, in dedicating this familiar bird to Mr. Robert Ridgway, whose contributions to the study of this group are well known.

excepting the bill and feet; upper and lower parts usually much more purplish, and barred or mottled with metallic green or blue.

DESCRIPTION.—Type, adult male, Washington, D. C., March 30, 1912; H. H. T. Jackson. Forehead between metallic fluorite violet and blackish violet, shading to blackish purple, with bronzy reflections on cervix, sides of head and of neck; lores velvet black with a greenish or bluish sheen; back, scapulars, and sides of breast, metallic greenish bronze mixed with metallic purplish bronze, marine blue, and blackish purple; rump purplish bronze; upper tail-coverts deep blackish purple with deep blue and bronze reflections; tail varying from metallic blackish dusky violet to deep metallic indigo blue, the margins of the inner webs of the feathers brownish black; wings brownish black with a faint bluish green or purplish sheen, but the exposed surfaces of tertials, greater, median, lesser, and the inner primary coverts, together with the outer edges of the secondaries, of the same color as the cervix, the basal portion of the outer margin of the primaries with a pronounced metallic greenish blue gloss, this becoming more purplish on the inner primaries; outer edge of alula deep dusky dull bluish green; chin and throat like the cervix, but the extreme anterior part of the chin decidedly deep metallic bluish; jugulum and sides of throat, purplish bronze; rest of lower parts metallic deep dusky dull violet, but the sides and flanks decidedly bronzy, and the middle of the abdomen dull black with little metallic sheen; lining of wing black with greenish, bluish, and purplish reflections. Wing, 144 mm.; tail, 136 mm.; exposed culmen, 30.5 mm.; tarsus, 33.5 mm.; middle toe without claw, 25 mm.¹

TYPE LOCALITY.—Washington, D. C.

GEOGRAPHIC DISTRIBUTION.—Middle eastern United States. Breeds north to southern Rhode Island, southern Connecticut, southeastern New York, and northeastern Pennsylvania; west to central Pennsylvania, extreme western Maryland, eastern West Virginia, southeastern Kentucky, central Tennessee, and northern Mississippi; south to central Mississippi, central Alabama, and northern South Carolina; and east to central North Carolina and the Atlantic coast from Virginia to Rhode Island. Winters south to southern Louisiana, southern Alabama, southern South Carolina, and probably to Florida.

REMARKS.—In color this race is exceedingly variable. Dr. F. M. Chapman has so fully treated² its color variations that no detailed description of these is here necessary. He distinguished three color phases: (1) the bottle green, (2) the bronze purple, (3) the brassy bluish green; but we should rather consider that there are four such color phases, as follows: (1) bottle green, (2) bronze

¹ For further measurements of this subspecies, cf. Ridgway, Bull. U. S. Nat. Mus., No. 50, pt. II, 1902, pp. 215-216.

² Bull. Amer. Mus. Nat. Hist., IV, Feb. 25, 1892, pp. 1-20.

purple, (3) purplish blue or bluish purple, (4) shining metallic green, the last of which seems to be of rather rare occurrence. The head, rump, and lower parts each have four similar color phases. In many cases, in the same individual, these do not all correspond with the color phases of the back. Consequently the intermediates between these phases and the various combinations of colors on the different parts of the bird, together with the absence or presence of bars on the upper and lower parts, make a bewildering variety of coloration. In fact, no two specimens appear to be exactly alike.

The geographic distribution of this race is confined in general to the region east of the Allegheny Mountains, but in the south it is extended considerably farther west. Birds from Garret County on the Alleghenian plateau in extreme western Maryland are intermediates between *Quiscalus quiscula ridgwayi* and *Quiscalus quiscula æneus*, and represent there the extreme western limit of the former.

Quiscalus quiscula æneus Ridgway.

Quiscalus æneus RIDGWAY, Proc. Acad. Nat. Sci. Philadelphia, XXI, June (= July), 1869, p. 134.

CHARS. SUBSP.—Similar to *Quiscalus quiscula ridgwayi*, but somewhat smaller, and with posterior upper and lower parts uniform brownish bronze, without differently colored bars.¹

TYPE LOCALITY.—Mount Carmel, Wabash County, southeastern Illinois.

GEOGRAPHIC DISTRIBUTION.—Central and eastern North America. Breeds north to central Labrador, James Bay in northern Ontario, Fort Churchill in northern Manitoba, and to southern Mackenzie; west to southwestern Mackenzie, western Alberta, western Montana, western Wyoming, central Colorado, northwestern and west central Texas; south to central southern Texas, northern Louisiana, western Tennessee, central Kentucky, central West Virginia, southwestern Pennsylvania, southwestern and central New York, northern Connecticut, and northern Rhode Island; east to eastern Massachusetts, eastern Maine, Nova Scotia, and eastern Newfoundland. Winters south to southern Louisiana, southern Alabama, southern South Carolina, and probably to Florida.

¹ For measurements of this race, cf. Ridgway, Bull. U. S. Nat. Mus., No. 50, II, 1902, p. 219.

REMARKS.—This subspecies differs from both the other forms of the species in its brownish bronze upper parts. Except for the color of the head, it is very uniform, but this part might be considered to have three color phases: (1) purple, (2) blue, (3) green, all of which are connected by intermediates.

So far as the actual amount of difference in typical specimens is concerned, it might well be called a species, but it so completely intergrades at different points with *Quiscalus quiscula ridgwayi*, that it seems best treated as a subspecies. At some other point or points it abuts on either *Quiscalus quiscula ridgwayi* or *Quiscalus quiscula quiscula*, and the lack of actual intergradation in such places does not necessarily indicate that it is a distinct species, because this condition is well known to exist in many races of other species, between which, however, intergradation does occur at other points. Nor can the fact that more or less typical specimens of each of two intergrading forms occur in the same breeding locality be considered as evidence of hybridism, since many subspecies are known to intergrade in this way. In fact, a perfectly gradual intergradation over a geographic area is rather the exception, since the individual variation in two forms often produces considerable irregularity. This is frequently the case even when the ranges do not actually meet, and such individual variation must, in itself, of course, be considered intergradation.

NOTES ON NORTH AMERICAN BIRDS.

IX.

BY HARRY C. OBERHOLSER.

FOLLOWING are notes¹ on four species of North American birds belonging to the families *Phaethontidæ*, *Ardeidæ*, and *Charadriidæ*.

***Leptophæthon lepturus catesbyi* (Brandt).**

Mr. G. M. Mathews has already indicated² that the name *Phaethon catesbyi* Brandt should replace that of *Phaethon americanus* Grant. The latter was originally based³ on the bird from the Bermuda Islands, and is, of course, the American representative of *Leptophæthon lepturus*. It differs from *Leptophæthon lepturus* in its somewhat smaller size and less extensive white tips on the five outer primaries, the black areas on these feathers being therefore larger. Mr. Mathews, like Mr. Grant, treats this form as a distinct species, and for this course gives the following rather unconvincing reason⁴: "This bird is only separable by its slightly larger [sic] size and the variation in the black markings of the primaries. In most genera such trifling differences would only be regarded as of subspecific value, but when dealing with Ancient Forms, such as the present, this must be given higher value." Examination of a series of specimens shows, moreover, that the characters separating *Leptophæthon catesbyi* from *Leptophæthon lepturus* are not entirely constant, and that the form must, therefore, be regarded as a subspecies of the latter. With this view of its relationship, its name will become *Leptophæthon lepturus catesbyi*.

¹ For previous papers in this series, cf. 'The Auk,' XXXIV, April, 1917, pp. 191-196; XXXIV, July, 1917, pp. 321-329; XXXIV, October, 1917, pp. 465-470; XXXV, January, 1918, pp. 62-65; XXXV, April, 1918, pp. 185-187; XXXV, October, 1918, pp. 463-467; XXXVI, January, 1919, pp. 81-85; XXXVI, July, 1919, pp. 406-408.

² The Auk, XXXII, No. 2, April, 1915, pp. 195-197.

³ *Phaeton americanus* Grant, Bull. Brit. Ornith. Club, VII, No. XLX, December 26, 1897, p. xxiv.

⁴ Birds of Australia, IV, pt. 3, June 23, 1915, pp. 310-311.

***Scæophæthon rubricaudus rotschildi* (Mathews).**

The Red-tailed Tropic Bird is included in our North American list on the basis of a single specimen obtained by Mr. A. W. Anthony near Guadalupe Island, Lower California, on April 23, 1897.¹ We have recently examined this specimen, which is now No. 21822 in the collection of the Carnegie Museum of Pittsburgh, Pa., and find it to belong to the subspecies *Scæophæthon rubricaudus rotschildi*, recently described² from Laysan Island in the Hawaiian group. This race differs from *Scæophæthon rubricaudus rubricaudus*, from the region about the Island of Mauritius, in its shorter bill and wing; and from *Scæophæthon rubricaudus novæhollandiæ* (Brandt), from Australia, in its smaller size and paler, less rosy coloration. By this change of identification the place of *Scæophæthon rubricaudus rubricaudus* in the North American list should be taken by *Scæophæthon rubricaudus rotschildi*.

***Casmerodius albus egretta* (Gmelin).**

The forms of the genus *Casmerodius* (= *Herodias*³) are commonly considered distinct species. Mr. G. M. Mathews has, however, recently treated⁴ the Australian bird as a subspecies. So far as our material indicates, there are, as Dr. R. B. Sharpe concludes,⁵ three forms of the genus, but all are without doubt only subspecies. The principal characters separating these consist in size, particularly of the tarsus, and in the length of the dorsal plumes or train. The colors of the bill, tarsus, and the bare portion of the tibia, which have been sometimes used as specific distinctions, are more or less unsatisfactory for this purpose, because

¹ The Auk, XV, No. 1, January, 1898, p. 39.

² *Phaethon rubricaudus rotschildi* Mathews, Birds of Australia, IV, pt. 3, June 23, 1915, p. 303 (Laysan Island).

³ Attention has already been called by other writers to the fact that the generic name *Herodias* Boie is a synonym of *Egretta* Forster, since its type is really *Ardea garzetta* Linnaeus, as designated by Gray (List Genera Birds, 1841, p. 86). The next available name is *Casmerodius* Gloger, as above given.

⁴ Birds of Australia, III, pt. 5, March 26, 1914, pp. 431-435.

⁵ Cat. Birds Brit. Mus., XXVI, 1898, pp. 88-100.

of very great seasonal changes; and until more is known regarding the actual process and sequence of these changes, it is not safe to use the colors of these parts in diagnoses.

The European form of the species, *Casmerodius albus albus* (Linnaeus), which ranges also to Africa and central Asia, is a large bird with long tarsi and comparatively short dorsal plumes, the latter usually less than 370 mm. in length, and not reaching much beyond the end of the tail. Examples from India and Burma are somewhat smaller and indicate intergradation with the Australian bird, but are, however, nearer *Casmerodius albus albus*.

The Australian race differs from *Casmerodius albus albus* in smaller size, particularly of the tarsus, and in somewhat shorter dorsal plumes; and Mr. Mathews¹ has separated it as a fourth race under the name *Herodias alba syrmatophora* (Gould). There is, however, apparently no difference between birds from Australia and those from the island of Timor, which is the type locality of *Ardea timoriensis* Lesson, either in the length of the tarsus or the dorsal plumes. Birds from other localities in the Malay Archipelago seem to be the same; while birds from Japan and China, although somewhat verging toward *Casmerodius albus albus*, are so near the Australian form that they are apparently not satisfactorily separable. Thus the birds inhabiting the region from Japan and China to the Malay Peninsula and Australia should again be united under the name *Casmerodius albus timoriensis* (Lesson).

The American bird, which ranges from the United States to Chile and Patagonia, is similar to *Casmerodius albus timoriensis*, but is rather larger and has a much longer train; and it differs from *Casmerodius albus albus* in decidedly smaller size and in its longer dorsal plumes, which latter usually measure from 420 to 500 mm., and reach 100 millimeters or so beyond the end of the tail. Since none of these differences is, however, entirely constant in relation to either *Casmerodius albus albus* or *Casmerodius albus timoriensis*, as a study of specimens shows, the American race should stand as *Casmerodius albus egretta* (Wilson).

¹ Birds of Australia, III, pt. 5, March 26, 1914, pp. 431-435.

Charadrius dubius curonicus Gmelin.

The Little Ringed Plover, *Charadrius dubius* Scopoli, is included in the North American list by reason of its supposed accidental occurrence in Alaska and California. The record from California is based on a specimen taken at San Francisco by Mr. E. F. Lorquin, and was made the basis of Mr. Ridgway's *Agialitis microrhynchus*.¹ This name Mr. Ridgway himself later made² a synonym of *Agialitis curonicus* (Gmelin). This specimen is still in the United States National Museum collection, where it is numbered 39523; and an examination proves that it is an ultratypical example of *Charadrius dubius curonicus*, as indicated by its very small bill.³

The record which at present forms the basis for the statement that *Charadrius dubius* occurs in Alaska is that of Mr. J. E. Harting,⁴ who, in recording the specimens obtained by Captain Collins of the "Enterprise," mentioned one of this species, but without giving a more definite locality than "doubtless obtained in high northern latitudes." It thus can be readily seen that the assumption of this specimen's Alaskan origin is quite unwarranted. There is, however, a perfectly valid Alaska record, based on a specimen taken on Kodiak Island and recorded as *Charadrius alexandrinus* Pallas.⁵ Without much doubt this record should be put under *Charadrius dubius curonicus*, and, therefore, *Charadrius dubius dubius* should be eliminated from our North American list and replaced by *Charadrius dubius curonicus*.

The present species we have recently referred to the genus *Elseya*, Mathews,⁶ but a more careful examination of its characters proves that it does not belong in that group, but is congeneric with *Charadrius hiaticula* Linnæus, the type of *Charadrius*.

¹ American Naturalist, VIII, No. 2, Feb., 1874, p. 109.

² Baird, Brewer, and Ridgway, Water Birds of North America, I, 1884, p. 160.

³ Cf. Hartert and Jackson, Ibis, 1915, pp. 531-533.

⁴ Proc. Zool. Soc. Lond., 1871, p. 117.

⁵ Schalow, Journ. für Ornith., 1891, p. 259.

⁶ Cf. The Auk, XXXV, No. 2, April, 1918, p. 206.

GENERAL NOTES.

European Widgeon on Long Island in Winter.—On January 11, 1919, Mr. Wm. de Forest Haynes of New York City shot a fine drake of this rare duck, *Mareca penelope*, on the main pond of the Southside Club near Oakdale, Long Island. The specimen was mounted, and is now in the club collection in the clubhouse. This is the third winter record, and I am indebted to Mr. Samuel Bettle for bringing it to my attention.—LUDLOW GRISCOM, *New York City*.

Breeding of the Black Duck in Lake Co., Ohio.—Dawson in his 'Birds of Ohio,' states, "If Black Ducks formerly bred in the northern part of this state, as Wheaton supposes, they were probably of this form" (*Anas rubryses tristis*). Jones, 'Catalogue of Ohio Birds' (1903), states, "Dr. Wheaton regarded the Black Duck as a casual summer resident in the northern part of the state, but I find no corroborative evidence to that effect." In the same writer's article, 'Nineteen Years of Bird Migration at Oberlin, O.' (Wilson Bulletin, December, 1914), the Black Duck is listed as a migrant only for Lorain County. Henninger in 'Notes on Some Ohio Birds' (Auk, January, 1910) gives a list of breeding ducks for the state, but the Black Duck is not included, nor have I found any isolated record of the Black Duck nesting in Ohio. Thus it seems the state is without an authentic record, the only evidence being Wheaton's supposition.

Therefore I am pleased to report that the Black Duck has nested regularly the past five years at the Mentor Marsh, and doubtless much longer than this. Adults have been seen in June, and both young and adults through July and August. Probably not over two pair have bred in any one year, as a late August flock of twenty-five was the most seen at any one time. Two specific dates upon which I observed young ducks under unusually favorable conditions are as follows: August 16, 1917, four young birds had fed out of the lily pads into open water that touched the base of the wooded bank skirting the marsh, and I worked slowly down to within twenty feet of them, seated myself and watched them for half an hour with my glass without them appearing disturbed in any way, although fully grown and able to fly. Under such favorable circumstances, I was even able to see the narrow edge of white, back of the violet-purple speculum, each time one chanced to turn on its side and spread a wing.

July 13, 1919, I flushed two young, about two-thirds grown, from under my very feet at the edge of the marsh. These also gave me the best possible view of the wing marks.

Another pleasing experience happened the last week in August, 1918, about dusk. Immature Black Ducks were coming from the direction of the Mentor Marsh to drop into the more open water of the Richmond swamp to feed. A pair of wary old adults, however, would not alight for

some time, but finally did so some distance away; and as I knew I could "sneak upon them" for observation at that particular place, I did so. As I cautiously looked around a corner of button-bushes, there they sat in the floating duck-weed, heads up and ready to jump on the instant, while surrounding them, unconcernedly feeding, were seven young Wood Duck, another species which breeds regularly in the wooded swamp between the two localities mentioned. The young Blacks are very tame up to the time of the hunting season, and I have thrown green apples at one in open water without being able to make it fly, although the water all but splashed the bird. This seems strange considering the extreme wariness of the adult bird.—E. A. DOOLITTLE, *Painesville, Ohio*.

Ruddy Shelldrake on the Atlantic Coast.—*Casarca ferruginea* has been taken in Greenland but not in the United States, so far as I know, until recently. A specimen was captured at Barnegat Bay in 1916 by Mr. W. H. Eddy, of Darby, Pa., and was identified by the editor of 'The Auk,' who, on general principles, was disposed to regard it as an escaped bird. Whether this was true or not we cannot know. It appears that the bird is not very uncommon in captivity, for Mr. Lee S. Crandall, Curator of Birds at the N. Y. Zoological Park, tells me that they have specimens there, and that the species has been bred on at least two occasions by Mr. William Bronwin, of Rye, N. Y.

On the other hand, a reported capture of this species on Currituck Sound in North Carolina has been current there for many years. This occurrence was related to me by Mr. W. L. McAtee, of the Biological Survey, but as the specimens were not preserved it did not seem best to note the incident until a specimen actually killed in the United States could be recorded. Mr. Eddy has furnished this specimen.

The reported North Carolina capture took place at a shooting resort kept by Jasper White near what is now known as Water Lily Post Office, Currituck County, N. C. Jasper B. White, the son of the man who kept the resort, was then a young man. A Mr. Fred Simonds, of Reading, England, in company with his uncle, had come to Currituck Sound for the shooting and was staying with J. B. White's father. The two young men were shooting together one day when a flock of five ducks came to them, of which three were shot. These birds were new to J. B. White, but Fred Simonds recognized them and told White that they were Ruddy Shelldrakes. Later, after he had returned to England, Mr. Simonds sent White a copy of 'British Game Birds and Water Fowl,' with colored plates, by Beverly R. Morris, and a letter received at the same time told White that the birds they had shot were figured in the book, and the plate of the Ruddy Shelldrake was at once recognized.

Mr. Jasper B. White writes me that the birds taken in Mr. Simonds' company were killed in 1886. He adds that he has seen birds of this species several times since then, and that they always appear in very cold weather. For some time he has been endeavoring to collect specimens for

Mr. McAtee, and recently winged one of a flock of five, which he followed and almost overtook. He was within a few feet of it before it got under the ice and escaped, and is confident of the identification.

The Barnegat specimen of the Ruddy Shelldrake secured by Mr. Eddy was killed November 14, 1916, while he was gunning on the east point of Sloop Sedge in Barnegat Bay. It was mounted and is still in his possession. It was recently again examined by Dr. Stone, who detected in the specimen no evidences of past captivity. It seems in all respects normal.

A "Yellow" Duck, quite unlike any bird known to old gunners who saw it, was killed last winter near Poplar Branch, Currituck Co., N. C., but the specimen was not preserved.

These reports suggest that at any time we may learn of other examples of *Casarca ferruginea* taken on the Atlantic Coast.—GEO. BIRD GRINNELL, New York City.

***Exanthemops* Elliot an Excellent Genus.**—The name *Exanthemops* Elliot (New and Unfig. Birds North Amer., II, pt. IX, 1868, pl. XLIV and text; type, by original designation, *Anser rossii* Cassin) is now used in subgeneric sense under the genus *Chen*, for *Anser rossii* Cassin. It was, however, originally proposed as a generic term; and the group somewhat recently has been rediagnosed and revived by its original describer (Elliot, Wild Fowl U. S. and Brit. Poss., 1898, pp. 268, 269). That this, moreover, is well justified is evidenced from an examination of the three species, *Chen hyperborea* (Pallas), *Chen caerulescens* (Linnaeus), and *Chen rossii* (Cassin). The first and second of these are strictly congeneric and constitute the genus *Chen* Boie; but the last differs so much and so fundamentally, that it ought not to remain in the same genus. The group that it represents, to which of course the name *Exanthemops* Elliot is applicable, may be diagnosed as follows: Similar to *Chen*, but bill relatively as well as actually shorter and not as long as the head; commissure not widely gaping; base of maxilla much wrinkled and warty in adult; anterior outline of the feathering on the sides of the base of the maxilla nearly straight, instead of triangular or strongly convex; tarsus $1\frac{1}{2}$ (instead of $1\frac{1}{4}$) times the exposed culmen; wing about $8\frac{1}{2}$ (instead of 7) times the exposed culmen. One of the characters given by Elliot (Wild Fowl U. S. and Brit. Poss., 1898, p. 268)—"depth [of bill] at base less than half the length of the culmen," appears not to hold, since there is no difference in this respect between *Exanthemops* and the species of *Chen*. The genus *Exanthemops* as here recognized is monotypic, and its only species will now stand as *Exanthemops rossii* (Cassin).—HARRY C. OBERHOLSER, Washington, D. C.

Notes on the Structure of *Anseranas semipalmata*.—The remarkable Australian Pied or Semipalmated Goose has been variously regarded as a member of the Anserinae (Newton, Dictionary of Birds), as an independent subfamily, Anseranatinae (Salvadori, Catalogue of Birds), and as of family rank, Anseranatidae (Stejneger, Standard Natural History).

In spite of its pronounced characters, it bears a general resemblance to the African Spur-winged Goose (*Plectropterus*), and as in two or three structural features the latter evinces a slight approach to *Anseranas*, the resemblance is possibly more than a superficial one.

The most evident peculiarities of the Pied Goose are the semipalmate feet, long, incumbent hind-toe, and long, sharp claws. The bill is peculiar, the face bare, and the top of the skull is elevated into a large, feathered protuberance. Internally a remarkable feature is the very long, coiled trachea. Pycraft states that the convolutions of the intestines are comparatively primitive in style.

In addition to these characters, I wish to call attention to several others some of which at least have probably not been recorded.

Gadow states that in the *Anseres* the oil-gland has but a single pair of orifices. I have examined several genera, including *Plectropterus*, *Cygnus*, *Branta*, *Dendrocygna*, and *Nettion*, and have found no exceptions to this statement except in *Anseranas*. Of the two individuals of this goose seen, one had eight, the other sixteen orifices in the large, heavily tufted oil-gland.

In the *Anseres* the standard number of middle primary coverts on the under side of the wing is six. I have determined this character in twenty-three genera belonging to nine of the eleven subfamilies recognized in the British Museum Catalogue, including *Cereopsis*. With the exception only of *Anseranas*, and *Plectropterus*, I have found invariably six of these coverts. The single specimen of *Plectropterus* examined had five; the two individuals of *Anseranas* had but two and three respectively.

Every one of the numerous genera of the order inspected, including *Cereopsis* and *Plectropterus*, has had the pollex furnished with a sharp claw, with the sole exception of *Anseranas*, both specimens of which agreed in the entire absence of a claw.

I have investigated the arrangement of the deep plantar tendons in *Nettion*, *Cygnopsis*, *Plectropterus* and *Anseranas*. In all but the last the two tendons are thoroughly fused for a variable distance above the base of the toes. In *Anseranas* there is no such fusion, the two tendons being loosely connected by two thin bands of tendinous tissue.

Of skeletal peculiarities, it may be noted that the furcula is V-shaped rather than U-shaped, as is usual in the *Anseres*, and with the symphysis enlarged; also that the palatines are very narrow, the rear edge of the metasternum only slightly notched and the pelvis of peculiar shape.

In the 'Cambridge Natural History' the misleading statement is made that "*Anseranas* and *Cereopsis* alone" have "the foot semipalmated." The former alone is truly semipalmate; in *Cereopsis* the webs are rather deeply incised, but this is also the case in the genus *Nesochen*.

A more serious error originated with Yarrell in 1827 (Trans. Linn. Soc., XV, 383). This has been quoted by various authors, the latest being Mathews in his 'Birds of Australia' (1914), and so far as I know has never been corrected. Yarrell described and figured the coracoids in two indi-

viduals of this Goose. The right coracoid was unlike the left, and the two birds differed greatly from each other in the form of these bones. I have recently had the opportunity of examining the skeletons of two adult males received from the New York Zoological Park. In both, the coracoids are symmetrical, alike, and of normal Anserine form. There can be little doubt that in Yarrell's specimens the coracoids were diseased and abnormal. Furthermore, Yarrell designated the coracoids as "clavicles," and the quotations of his description have given no hint of his erroneous use of this term.

Several other Anatine genera or groups of genera are strongly marked, such as the Mergansers (*Merginae*), the Torrent Ducks (*Merganettinae*), the Cape Barren Goose (*Cereopsinae*), and the Swans (*Cygninae*). The last two are probably the most distinct. The Swans are distinguished by their bare lores, large number of neck vertebrae, very long necks, great size, and wholly white or black and white plumage.

Anseranas is in my opinion by far the most aberrant member of the Anseres. None of the other groups mentioned approach it in the number of unique distinctive characters, and there can be little doubt that it is entitled to family rank. It is surely better characterized than certain commonly recognized families of Gallinae, Limicolae, and Psittaci.—W. DEW. MILLER, *American Museum of Natural History, New York City.*

***Sarkidiornis sylvicola* in British Guiana.**—I was very much interested in Mr. Crandall's note (*The Auk*, XXXVI, No. 3, July, 1919, p. 419) relative to the occurrence of *Sarkidiornis sylvicola* Ihering near Barcelona, Venezuela, in November, 1918, because I had previously learned of the presence of this species in British Guiana in the same year.

On July 12, 1918, Mr. James Rodway, Curator of the Georgetown Museum, wrote me that he had just received for the Museum "a pair of Ducks, *Sarcidiornis carunculata*, shot on the East Coast, but hitherto not recorded for the Colony." Upon my inquiry for further details, Mr. Rodway, under date of September 13, 1918, wrote: "In regard to the *Sarcidiornis* we have a pair shot on the East Coast, Dem. at Pln. Hope, by Mr. W. Mearns, who saw flocks of 25 or more and killed several for the table. He says they are excellent eating." In the meantime a note had been published in 'Timehri' (Vol. V, Third series, Aug., 1918, p. 168) stating that, through the kindness of Mr. W. Mearns of "Hope," the Museum had received a head of a male *Sarcidiornis carunculata*.

It is apparent from the dates of the records that the ducks were on the north coast of South America for at least five months, from July to November. So far as I know they have not been observed in Surinam. Von Berlepsch (Nov. Zool., XV, 1908, p. 313), however, lists the species in his 'Birds of Cayenne' (ex Eyton).—THOMAS E. PENARD, *Arlington, Mass.*

An Overlooked Record of the Trumpeter Swan.—In 'The Auk,' Vol. XXXII, January, 1915, Mr. Henry K. Coale had a very interesting

article on the present status of the Trumpeter Swan in North America. In this he enumerates all the records of that bird that he could find, either from personal correspondence or from the literature at hand. Let me point out one notable omission. In the 'Wilson Bulletin,' September, 1902, p. 80, there is a record for the Trumpeter Swan (*Olor buccinator*) in April, 1900, from Jackson County, Ohio (Henninger, Birds of Middle Southern Ohio). The history of this specimen is as follows: The bird was shot on either April 18 or 19, 1900, near Wellston, Jackson Co., Ohio, and sent in the flesh to Mr. Oliver Davie, the well-known author and taxidermist of Columbus, Ohio. Mr. Davie and I were good friends and talked about this specimen several times. Mr. Davie's identification was certainly correct. He mounted the bird and returned it to the owner, whose name I have forgotten, nor do I know what has become of the bird by this time.—W. F. HENNINGER, *New Bremen, Ohio*.

Little Blue Heron on Long Island, N. Y.—On April 5, 1919, I was shown a Little Blue Heron (*Florida caerulea*), which had been found dead, a day or two before, on the banks of the Nissequogue River, at Smithtown, Long Island, N. Y. The body was sent to me by express and received on April 11, 1919. I took it up to the American Museum of Natural History and found my identification was correct. It was too far gone to be mounted, but dissection proved it to be a male. The stomach was practically empty. It was in the blue plumage, and on April 5, when I first saw it, was in first-class condition. I foolishly did not take it with me, as I did not realize its rarity, and only wrote for it afterwards.

Eaton only gives four spring records for New York, viz.: "Lawrence (N. T.), April 3, 1885, Far Rockaway, L. I."; (Byram) Dutcher's Notes, April 7, 24, 1891, Shelter Island, L. I.; Dutcher's Notes, Montauk, L. I., April 20, 1898," and Binghamton, May 8-12, 1900. Miss Lillian Hyde.—ROBT. B. LAWRENCE, *New York City*.

Wood Ibis in Massachusetts.—Through the thoughtfulness of Mr. E. H. Forbush and the Massachusetts Commission on Fisheries and Game, the Boston Society of Natural History has been presented with a young Wood Ibis (*Mycteria americana* Linné) taken at Chilmark, Martha's Vineyard, Massachusetts, on November 26, 1918, by James A. Vincent.

This is the second record of the species for Massachusetts, and the fifth for New England; Maine, Vermont, and Rhode Island each having one instance of its presence.—W. SPRAGUE BROOKS, *Boston Society of Natural History*.

Roseate Spoonbill in Utah.—On July 2, 1919, a Roseate Spoonbill (*Ajaia ajaja* Linn.) was brought to me for identification. It had been killed at Wendover, Utah, by Joseph Condley and was one of five that appeared on his ranch. The specimen was a male and the skin is now in my collection.

This is the first record I have of the occurrence of this species in Utah. Wendover is close to the Nevada line in the midst of an arid region.—CLAUDE T. BARNES, *Salt Lake City, Utah.*

Roseate Spoonbill in North Carolina.—On April 17, 1919, Edward Fleisher wrote of having seen a Roseate Spoonbill on Smith's Island, located at the mouth of Cape Fear River, North Carolina. He wrote: "I had a perfect study of it with my field glass in my hand and my heart in my mouth."

Mr. Fleisher's home is in Brooklyn, New York, and his ornithological studies are well known to many.—T. GILBERT PEARSON, *New York City.*

Growth of a Young Killdeer (*Oxyechus v. vociferus*).—Last summer, as usual, a pair of Killdeers nested in the old familiar pasture near my home. Efforts at finding the nest were fruitless, but on July 21 a young one was finally discovered, which became subsequently an object of much interest. During the next few weeks, through a series of harmless captures which were as surprising to me as to the captive, because with each liberation I never expected to see it again, I came into possession of the interesting figures which indicate the growth of the little one during the period of a month.

On August 4 the primary wing feathers were sprouted, but still in the sheath. On the last date which I examined it—August 18—these were well developed and the young able to fly short distances. The tail down was also largely replaced by fine feathers, as was also that of the remainder of the body.

Growth measurements of a young Killdeer taken in millimetres:

	July 21	July 28	Aug. 4	Aug. 18
Total Length	88	104	150	215
Height to Shoulder	68	80	85	110
Tarsus	27	30	33	40
Bill (Premaxilla)	11	13	15	19
Tail	25	40	45	70
Wing (Primaries)				110

—J. DEWEY SOPER, *Preston, Ontario.*

Mating "Song" of the Piping Plover.—April 1, 1917, was a fine warm and sunny spring-like morning on Plymouth Beach. There were quite a number of Piping Plovers (*Egialitis meloda*). They were pattering around up and down the beach, and many seemed to be laboring under some excitement. They were not a flock, as such, but seemed to be birds drawn together by a common mating instinct. Some were apparently paired and others were as apparently pairing. I noticed a group of three, two of which chased each other around just like two male Robins fighting over a female. Some flew around rather low over the beach (some of them rather close to me), in apparent sexual excitement, and uttered notes while

on the wing. These were different from the usual mellow, rather low notes which the birds were uttering more or less all the time while on the sand. Their notes on the wing were higher in tone and rather long drawn out, and mixed in with them were some little chuckles. The whole might be described as some sort of a mating song.—JOHN A. FARLEY, *Melrose, Mass.*

Upland Plover in New York.— Since 1917 there has been a steady and most satisfactory increase of the Upland Plover (*Bartramia longicauda*) in the town of Cossackie, Green Co., New York. The average date of their arrival is April 24 and they leave about September 12.

On May 8 this year, while walking five miles along a road bisecting the Flats that lie west of the village, I counted the songs of over fifty individuals and saw nearly as many.

They often alight on top of the telephone poles bordering the road, where one can approach them within twenty feet; give their bubbling call and fly off only to circle around to another pole further on. They begin nesting May 6-8 and then become very shy, and their song is rarely heard.

By July 15 the young birds are well grown. On that date, 1918, one came from the field down to a stream, bobbing its little round head, bathed and dried its feathers, all within fifteen feet from where I was sitting on the opposite bank.

Their occurrence in the Hudson Valley seems to be unusual, as I can find no record of that fact.—CHARLOTTE BOGARDUS, *Cossackie, N. Y.*

Turkey Vulture at Plymouth, Mass.— A Turkey Vulture (*Cathartes aura septentrionalis*) was shot at Manomet, Plymouth, Mass., July 25, 1910, by Mr. Wallace Miles. I saw the dead bird at Mr. Miles' farm.—JOHN A. FARLEY, *Melrose, Mass.*

Harris's Hawk in Kansas.— As I was reading the 'General Notes' in 'The Auk' for April, 1919, I noticed that C. D. Bunker of Lawrence, Kansas, stated that a female Harris's Hawk (*Parabuteo unicinctus harrisi*) had been killed near Lawrence, Kansas, on December 25, 1918.

I wish to state that on the 14th day of December of 1918 I found a male Harris's Hawk which had been shot, in Wichita on the Little Arkansas River. This hawk is mounted and is in my collection.—LEROY SNYDER, *Wichita, Kansas.*

Tachytriorchis, the Generic Name for the White-tailed Hawk.— The name *Tachytriorchis* Kaup (Class. Säug. und Vögel, 1844, p. 123; type by monotypy, *Falco pterocles* Temminck [= *Buteo albicaudatus* Vieillot]) now stands in our Check-List of North American Birds as a sub-generic heading under the genus *Buteo*. Examination of its type species (*Buteo albicaudatus* Vieillot), however, shows that it represents undoubtedly a generic group, its short tail, long tarsus, and long wing-tip trenchantly separating it from *Buteo*. In detail, *Tachytriorchis* differs from *Buteo* in

having the tail less than $\frac{1}{2}$ the length of the wing, whereas in *Buteo* it is more than $\frac{1}{2}$ of the latter; the tarsus about $\frac{1}{2}$ the length of the tail (instead of much less), also $2\frac{1}{2}$, or more, times the exposed culmen with cere (instead of $2\frac{1}{2}$ times or less); wing about $4\frac{1}{2}$ times the length of the tarsus (instead of $5\frac{1}{2}$ times or more); and the primaries exceeding secondaries by nearly the length of the tail (instead of, as in *Buteo*, by not over $\frac{1}{2}$ of its length).

Mr. Charles Chubb (Birds Brit. Guiana, I, 1916, p. 231) has recognized this genus, but into it puts also *Buteo abbreviatus* Cabanis. The latter action, however, is doubtless an inadvertence, since this species is absolutely congeneric with the type and other species of the genus *Buteo*. The forms of this genus, *Tachytriorchis*, are as follows:

Tachytriorchis albicaudatus albicaudatus (Vieillot).

Tachytriorchis albicaudatus exiguus Chapman.

Tachytriorchis albicaudatus colonus (Berlepsch).

Tachytriorchis albicaudatus sennetti (Allen).

— HARRY C. OBERHOLSER, Washington, D. C.

A Flight of Broad-winged Hawks and Roughlegs in Lake Co., Ohio.— While seated by a country roadside, overlooking some low meadows on April 27 of this year, four medium-sized hawks came low and directly over my head. Hastily turning my glass upon them, I secured enough field marks to pronounce them Broadwings (*Buteo platypterus*). As I followed them with the glass their number suddenly increased to eight, and then, as I swept the sky, it seemed to be alive with them and I counted twenty-five after some had vanished in the distance. Realizing I was at last witnessing a hawk flight I kept a good watch and within a short period of time saw nearly a hundred. Soon after the first bunch of Broadwings had passed came some larger birds, singly, or at most by twos, flying high and far apart. When one was directly overhead another would be seen coming in the distance. Their identity puzzled me at first, until finally one came comparatively low, and the black belly band of a Roughleg (*Archibuteo lagopus sancti-johannis*) was plainly discernible. Among these large hawks was a single Osprey. All the Roughlegs were sailing with the wind and flying a straight northeasterly course, while the Broadwings kept in bunches and circled about to some extent while still progressing steadily in the same direction. The day was clear, with a fresh wind blowing steadily. The most interesting fact to me was the late date the Roughlegs were leaving the country and the number of them — some twenty all told — and I have reason to believe I missed a good many by not being farther along the road, where I could also have seen across the wide valley of the river back of my position. As to all of the large hawks being Roughlegs, I think there is no question, since all were of the same size and silhouette, and the one which came low was easily identified. And I know the Eagle, Redtail and Red-shouldered, too well to have confounded them. A number of Roughlegs were resident here through the winter. — E. A. DOOLITTLE, Painesville, Ohio.

Buteonidæ versus Accipitridæ.—The name of the family of Falconiformes, now called Buteonidæ, has been recently changed to Aquilidæ by Dr. Ernst Hartert (Vögel Paläarkt. Fauna, Heft VIII [Vol. 2, Heft II], August, 1913, p. 1087). If this alteration was made because the generic name *Aquila* Brisson (Ornith., I, 1760, p. 419) was supposed to be the genus in this family first described, the fact that *Accipiter* Brisson appeared on an earlier page of the same volume (Ornith., I, 1760, p. 310) was apparently overlooked. Hence, if the earliest described generic name be considered the necessary basis for the family name, the family of birds now known as Buteonidæ must be called Accipitridæ instead of Aquilidæ. If, on the other hand, we consider that the type genus of this group is the one on which the family name was first based, the designation of this family will still become Accipitridæ; since Vigors (Zool. Journ., I, 1824, p. 316), who was the first to subdivide the original family Falconidæ, created five groups, which he called "Stirps," as follows: *Accipitrina*, *Falconina*, *Buteonina*, *Milvina*, and *Aquilina*; and in seeking a name for the remainder of the family after the separation of the true Falcons, we must take the first mentioned group in Vigors' list, which is, of course, *Accipitrina*, based on *Accipiter*, as the type genus. Thus, if we determine the proper family name of the Buteonidæ by either of these two rules, its designation will become Accipitridæ.—HARRY C. OBERHOLSER, *Washington, D. C.*

Snowy Owl in Detroit, Mich.—A fine male specimen of the Snowy Owl (*Nyctea nyctea*), in perfect winter plumage, was captured on Belle Isle, Detroit, April 14, by Mr. Robert Flowerday, superintendent of the park, and is now in a cage at the Zoo. The bird was shot twice, and so badly wounded that it was believed at the time that it would not survive, but it was cared for successfully, although at first refusing to eat. So far as is known, this is the first time that a Snowy Owl has come to this vicinity and remained so late, although there is a previous record (Taverner) of one having been seen at the Flats, April 5, 1906. The late wandering of this bird is all the more remarkable from the fact that the winter was one of exceptional mildness during all the months.—ETTA S. WILSON, *Detroit, Mich.*

The Name of the Black Cuckoo.—Hartert (Nov. Zool., X, 1903, p. 232), in his review of the genus *Eudynamys*, considered it logical to treat the forms of the Black Cuckoo as subspecies of *orientalis*, based on *Cuculus orientalis* Linné (Syst. Nat., I, 1766, p. 168), which he regarded as the oldest name, and which in the twelfth edition of Linné has page precedence over *C. honoratus*, *C. scolopaceus*, and *C. niger*. At present the name *orientalis* is restricted to the bird from Southern Moluccas, while *honoratus* is applied to the Indian bird, with *scolopaceus* and *niger*, both from Bengal, as synonyms. As a matter of fact, however, the names *C. scolopaceus* and *C. niger* had previously been used by Linné in the tenth edition (Syst. Nat., I, 1758, p. 111), based respectively on "The Brown and Spotted Indian Cuckoo"

and "The Black Indian Cuckow" of Edwards (Nat. Hist. Birds, II, 1747, pl. 59 and pl. 58), which represent quite unmistakably the species in question. The name *scolopaceus*, which stands first on the page, should be used for the species, and the fourteen races currently recognized must be known as:—

- Eudynamys scolopacea scolopacea* (Linné).
- Eudynamys scolopacea malayana* Cabanis and Heine.
- Eudynamys scolopacea harterti* Ingram.
- Eudynamys scolopacea mindanensis* (Linné).
- Eudynamys scolopacea facialis* Wallace.
- Eudynamys scolopacea melanorhyncha* S. Müller.
- Eudynamys scolopacea orientalis* (Linné).
- Eudynamys scolopacea everetti* Hartert.
- Eudynamys scolopacea rufiventer* (Lesson).
- Eudynamys scolopacea alberti* Rothschild and Hartert.
- Eudynamys scolopacea salvadori* Hartert.
- Eudynamys scolopacea cyanocephala* (Latham).
- Eudynamys scolopacea subcyanocephala* Mathews.
- Eudynamys scolopacea flindersii* Vigors and Horsfield.

THOMAS E. PENARD, *Arlington, Mass.*

Aerial Evolutions of a Flicker.—While out with the class in bird study on May 25, 1919, my attention was attracted to a large bird going through some very peculiar maneuvers. He was just across a ravine and about four hundred yards away from where we stood. When first noticed, he was about fifty feet from the ground and ascending in peculiar, bumpy, and jerky spirals. This was maintained until a height of about 350–400 feet was reached, when, after a short pause, a reverse of practically the same performance was gone through. The Flicker (*Colaptes auratus luteus*), for as such he was identified by this time, then alighted in a cherry tree, just above a female that we had previously failed to notice, and completed the performance by going through his more familiar courting antics. I wonder if others have seen the Flicker do this.—C. W. LEISTER, *McGraw Hall, Ithaca, N. Y.*

Two Recent Records of the Horned Lark in Western New York.—Owing, perhaps, to the paucity of published records, local ornithologists have for some time regarded the Horned Lark (*Otocoris alpestris alpestris*) as rare, or at least uncommon, in this general locality. In treating of the subspecies in his 'Birds of New York' (1914), Eaton remarks that for fifteen years he has failed to secure any specimens on the shores of Lakes Erie and Ontario. He adds, however, that the bird unquestionably does occur there in the winter or during the migration time in the late fall. These facts have led me to place on record two recent dates of its occurrence near the village of Hamburg, about fifteen miles south of the city of Buffalo.

On December 17, 1916, I located a flock of about thirty larks feeding on weed seeds in the fields east of Hamburg. Although there might have been some Prairie Horned Larks (*O. a. praticola*) present, all the individuals examined by me were undoubtedly Horned Larks. At very close range, I noted the deep sulphur-yellow throat and also the yellow line over the eye. I might add that I am very familiar with the resident subspecies, which is one of the characteristic birds of our open country.

On March 22, 1919, while walking across a large plowed field south of Hamburg, I had the good fortune to flush a flock of at least sixty larks. The individuals of this band were much wilder than Prairie Horned Larks, and would take wing without apparent cause, much resembling Pipits (*Anthus rubescens*) in this respect. I was somewhat disappointed on account of this fact, for I had not as yet been able to make the identification with my glass. However, it soon developed that the birds habitually wheeled about in the air and returned to near the spot from which they were originally flushed. When opportunity finally presented itself for work with the glass, I was both surprised and pleased to note that many members of the flock had so very much yellow on the head and throat that identification as *O. a. praticola* was out of the question. A fairly large percentage of the birds, however, were evidently duller, probably females.

Inasmuch as I do not recall finding comparisons of the notes of the two subspecies in the literature, it might be of interest to append here a few remarks on the calls and songs. It seemed to me that the ordinary notes uttered as *Otocoris alpestris alpestris* takes wing are decidedly sharper than similar ones of *O. a. praticola*. Several of the males were singing on March 22 — not the flight song, of course, but the ebullient gurgling which is usually uttered from the ground in the case of the resident subspecies. Although it might easily have been that only young males were singing, the song of *Otocoris alpestris alpestris*, as I heard it, was decidedly not as finished a performance as that of *O. a. praticola*. The initiated would immediately recognize it as belonging to some form of *Otocoris alpestris*, but it certainly lacked the smoothness of *O. a. praticola*, and the notes themselves were decidedly wilder.—THOMAS L. BOURNE, Hamburg, N. Y.

Abnormal Beak of a Horned Lark (*Otocoris alpestris praticola*).—

While collecting on May 8, 1911, I secured a very interesting and curious example of natural abnormality — an adult Horned Lark with a peculiar enlargement of the lower mandible. This member, of a dull bone tint (abnormal even in color), projected at least nine thirty-seconds of an inch beyond the upper mandible, terminating in a very blunt tip slightly darker than elsewhere. The upper mandible was also somewhat exceptional, but reversed, being smaller than is usual with the species, by about two-sixteenths of an inch, the normal length being approximately seven-sixteenths.

The bird was feeding with one other on a newly cultivated field, and when taken a small spherical lump of mud was frozen on the long lower mandible, reminding one of the protected tip of a foil. The night before had been

very cold and the frozen ground, thawing under a warm morning sun, had been adhesive enough first to stick, then with the chill of the air to again congeal upon the projecting member as the bird sought its breakfast.

The Lark was in perfect physical condition when collected, notwithstanding the cumbersome disadvantage under which it lived, a circumstance as interesting to the teratologist and others as it is also surprising, considering the malformation of so highly essential an organ.—J. DEWEY SOPER, *Preston, Ontario*.

The Raven in Connecticut.—On May 25, 1919, we observed a Raven (*Corvus corax principalis*) about on the border line between the towns of Norwalk and Westport, Conn. The bird was circling over a large salt marsh. We observed it through 12-diameter binoculars. The soaring flight, the widespread primary feathers, large size, and coal-black color were clear without a glass. Through the glass we could see the heavy raven beak, and that the head was feathered and black, points that left no doubt in our minds of the identification of the bird. Both of us are familiar with the Raven in other regions where it is of more common occurrence.—CLIFFORD H. PANGBURN AND ARETAS A. SAUNDERS, *Norwalk, Conn.*

A Strange Blue Jay Flight.—May 25 of this year found me hunting warblers along a narrow tree-bordered roadway skirting a swamp, a few hundred yards from the beach of Lake Erie. By chance I looked up and saw five Blue Jays flying about fifty feet above the tree tops, and before my glance had ended others came into view and still others behind them. They were flying northeast and keeping very quiet. I began to count them, and in about fifteen minutes' time had seen ninety-five Jays. And this does not begin to number those that passed, for, on account of the trees, my view to each side was much restricted, and there is no telling how many had gone on before I casually looked up. They were in a long stream, with now and then a bunch of five to fifteen. Can any one suggest a plausible reason for Jays to be flying in such numbers during the nesting season?—E. A. DOOLITTLE, *Painesville, Ohio*.

Evening Grosbeaks about Beverly Farms, Mass.—In early May, when I moved to Beverly Farms from Florida, my neighbors, Mr. L. A. Shaw and Mr. Gordon Means, spoke to me of the many Evening Grosbeaks which they had seen during the latter part of the winter. They told me that from 75 to 100 birds appeared about March 10 and were seen daily after that date. They never entered the woodland at all, but spent their entire time about the shrubberies and tree plantations of the lawns and gardens between Pride's Crossing and Beverly Farms. Their number was somewhat diminished when I saw them first about May 14, and on the night of May 19 all of the others disappeared from the neighborhood.—T. BARBOUR, *Museum of Comparative Zoology, Cambridge, Mass.*

Evening Grosbeaks at Boonville, N. Y.—From May 5 to 10 I was in Boonville, N. Y., and during that time I observed daily a flock of twenty Evening Grosbeaks. I was there again on the fifteenth, but could not find any of the birds. This is an unusually late date. I am informed that they were seen continuously through the winter. They were also reported at Constableville, eight miles to the north, during the previous winter. The birds which I saw in Boonville were feeding on the ground and in low shrubs.
— F. C. SMITH, *Utica, N. Y.*

The Evening Grosbeak on Long Island, N. Y.—On the afternoon of February 4, 1919, my attention was attracted by a series of finch-like notes uttered by a flock of Evening Grosbeaks (*Hesperiphona vespertina vespertina*) that was flying eastward. An excited, but rather poor imitation of their call notes caused them to swerve from their course and pitch into a clump of wild cherry trees standing in a hedge-row about a quarter of a mile away. Hastening to the spot, I found them on the ground busily feeding on the pits of the wild cherry. With their powerful bills it seemed an easy task for them to split the pits and remove the kernels. Although not shy, they appeared to be very restless, keeping up an almost continuous calling, flying back and forth between the trees and ground. The birds, thirteen in number, were all in the plumage of the female with the exception of three or four that were in the black and yellow dress of the male. A portion of the flock soon flew to a yellow locust tree overgrown with vines of the poison ivy, and began picking among the ivy seeds. On my near approach they took fright and flew away to the eastward. No others were seen until March 26, when a flock of eleven was seen in the same locality.

On the morning of April 4 a flock of fifteen was seen flying north near the railroad station at Miller Place. Their flight was high and very direct. They were very noisy, keeping up a continuous calling, but refused to be diverted from their course by my imitations of their calls.

April 9 a small flock spent most of the day among the maples and black alders in a small swamp. I believe that all of the birds noted were merely transients and did not remain anywhere in the vicinity during the periods between the dates on which they were noted. The winter of 1918-1919, one of the mildest on record, would not lead one to expect a visit from these birds. The two preceding winters were of unusual severity, yet nothing was seen or heard of these birds on Long Island. There was a scarcity of suitable food for these and similar birds during the past two winters, more noticeable, perhaps, during the winter of 1918-1919 than in 1917-1918. A similar condition existed in many sections of the north, and may have been a contributive cause to the Grosbeaks wandering so far from their normal range in search of new feeding grounds.—A. H. HELME, *Miller Place, Long Island, N. Y.*

Evening Grosbeaks again at Lakewood, N. J.—Lakewood, New Jersey, harbored Evening Grosbeaks again on February 20, 1919, and it is

perhaps worth while to record the fact, since but one record¹ of their appearance there seems to have been made. Eight or ten birds formed the flock, which I watched at close range for an hour or so, at the corner of the Lake Drive and Forest Avenue, whilst they were feeding in trees and on the ground. About half of them were males.

The writer was at Lakewood, except for an absence of five weeks, from September 18, 1918, to March 22, 1919, and did not see Grosbeaks on any other occasion.—NATHAN CLIFFORD BROWN, *Portland, Maine*.

Evening Grosbeak (*Hesperiphona v. vespertina*) in Ohio in May.—

There were few if any reports of the Evening Grosbeak west of the Alleghenies for the winter of 1918-19, so it somewhat surprised me when on May 18 Mr. Glenn Vesey told me there was a male bird down in the Grackle roost, a thick growth of various haws and wild apples on the flats of Grand River. Knowing that he would not be liable to make a mistake, I looked through the growth late that afternoon but without result. However, upon visiting the place next morning the bird was there and, as reported, was a male in the best of adult plumage. The ground in places was strewn with the fallen haw apples of the fall before, and it was upon these that the bird was feeding. He was still there on the afternoon of May 20, but the next day I failed to find him.—E. A. DOOLITTLE, *Painesville, Ohio*.

Henslow's Sparrow in New York and Virginia.—One of the best recent bird discoveries in the Ithaca region was the location of a breeding colony of Henslow's Sparrow (*Passerherbulus henslowi*) on a sedgy hill side just south of Wilseyville (10 miles south of Ithaca), N. Y. On May 14, 1916, Mr. Ludlow Griscom found three male birds on this rather high hill. The spot has a northern exposure and the birds were fond of sitting on the sedgy stools or in the tops of pine seedlings. They were very rail-like and elusive. On June 1 of the same year Mr. Griscom showed several of us the site, Dr. A. A. Allen being of the party. At that time we found five males, a few females, and a nest with one egg and three young. The nest is very difficult to find. On June 8 the same five males were in evidence. The following year, on July 5, 1917, Messrs. Allen and G. A. Bailey found another nest with four eggs. In 1916 (July 2), after the discovery of it at Ithaca, the author found one Henslow's Sparrow at Emerson, N. Y., at the northern end of Cayuga Lake. In 1918 another colony was found on the game farm of the university. This year (1919), on May 11, Mr. S. E. R. Simpson found it near Varna (three or four miles northeast of Ithaca, N. Y.).

The year following my introduction to this species, on May 30, 1917, Mr. Francis Harper showed me the Alexandria Va. colony and I determined to watch for the species southward. I heard it in two or three localities southward to Elmont, Va., where I made a definite journal record

¹ Auk, XXXIV, p. 477.

(May 31, 1917). On May 30, 1917, from Alexandria to Fredericksburg we did not record it. This species was heard south of Petersburg for a short distance, and from this vicinity (1918, Camp Lee) Mr. Harper wrote me that he and Mr. Holt recorded it as well. The above notes would indicate a much wider range in Virginia than that given by the author of 'The Birds of Virginia, 1913' (p. 224).—A. H. WRIGHT, *Ithaca, N. Y.*

The Dickcissel in Virginia.—On May 31, 1917, in the outskirts of Richmond, Va., Dr. H. H. Knight and I discovered a fine singing male beside the road in what looked to be a real estate development tract. We were following the main auto route from Washington into Richmond. I was attracted to it by first seeing it—my first live Dickcissel; while Dr. Knight recognized the sound as a reminder of his home country (Missouri). This record is published because the author chanced to see a note a few months ago (Wilson Bulletin) by an ornithologist of Virginia to the effect that he had not seen the Dickcissel in Virginia for twenty years.—A. H. WRIGHT, *Ithaca, N. Y.*

***Piranga erythromelas* versus *Piranga olivacea*.**—Since the discovery that *Fringilla rubra* Linnæus (Syst. Nat., ed. 10, I, 1758, p. 181) is the Summer Tanager instead of the Scarlet Tanager, the latter has passed under the name *Piranga erythromelas* (Vieillot). There seems, however, to be an earlier name for the Scarlet Tanager in *Tanagra olivacea* Gmelin (Syst. Nat., I, ii, 1789, p. 889). This is based on "l'Olivet" of Buffon (Hist. Nat. Ois. [original edition], IV, 1778, p. 269); the "Olive Tanager" of Pennant (Arctic Zool., II, 1785, p. 369, No. 238); and the "Olive Tanager" of Latham (Gen. Synop. Birds, II, pt. 1, 1783, p. 218, No. 4); and the habitat given as "Cayenna et Noveboraco." The diagnosis given by Gmelin is as follows: "*T. olivacea, gula et pectore flavis, abdomine albo, remigibus rectricibusque fuscis margine albis.*" This diagnosis is almost a literal translation, though somewhat abridged, of the descriptions given by Pennant and Latham, both of which latter are essentially the same. In fact, Latham refers to Pennant's then unpublished 'Arctic Zoology,' and Pennant in this work cites Latham's account. A comparison of the diagnosis given by Gmelin and the descriptions of Latham and Pennant with a peculiar transition plumage of the Scarlet Tanager, and their descriptions of their female Olive Tanager with the female Scarlet Tanager, leaves no doubt at all of their entire agreement.

This peculiar transition plumage above mentioned seems to be little known, probably because of its brief duration and consequent rarity in collections. It is a stage, alike in both sexes, between the juvenal and the first autumn plumages, in which the juvenal feathering of the entire upper parts is retained, but on the anterior lower surface the streaked condition of the juvenal stage has been replaced by olive yellow; while the abdomen has lost so much of its yellowish tinge that at superficial glance it looks white.

The descriptions given by both Pennant and Latham were based on speci-

mens from New York in Mrs. Blackburn's collection, taken, as practically all her New York specimens were, near Hempstead, Long Island. It is of interest in this connection to note that both Pennant and Latham apparently had some suspicion that their Olive Tanager was the female of the Scarlet Tanager, and their reasons for describing it as a separate species are given in the following footnote by Pennant in Latham's work (Gen. Synop. Birds, II, pt. 1, 1783, p. 218): "From their being found at this last place [New York], and my having such authority for describing both sexes, I must conclude that the species is distinct; otherwise I should have suspected it to have been the female of the last described [Scarlet Tanager]." In the description of the female of the "Olive Tanager," there is the information, omitted by Gmelin in his diagnosis, that the "under sides of the body [are] pale yellow," which is the chief difference between the adult female of *Piranga erythromelas* and the transition plumage described above. It is, therefore, evident that the male of Gmelin's *Tanagra olivacea* is the Scarlet Tanager in this odd-looking transition plumage; and its female the adult female of the Scarlet Tanager.

Gmelin, Latham, and Pennant all cite "l'Olivet Buff." as a synonym, and for this reason include Cayenne in the habitat, but the description given by Buffon, based on a specimen from Cayenne, is possibly not of the female Scarlet Tanager. At least, if it is, the alleged locality is probably wrong, since the species is not known to occur in the Guianas. At any rate, this description of Buffon does not figure at all in the diagnosis given by Gmelin, by Latham, or by Pennant; hence in determining the identity of *Tanagra olivacea* it may be disregarded as a possibly erroneous synonym.

From the above discussion it appears that the technical name of the Scarlet Tanager, now *Piranga erythromelas* (Vieillot), should become *Piranga olivacea* (Gmelin), and its type locality, Hempstead, Long Island, New York.—HARRY C. OBERHOLSER, Washington, D. C.

The Tanagrine Genus *Procnopis* Cabanis.—*Tangara* (formerly *Calliste*, *Calospiza*) is by far the largest genus of Tanagers, comprising about sixty distinct species. These exhibit great diversity in coloration and vary considerably in the form of the bill, but in other respects they agree rather closely.

On the one hand they are allied to the slender-billed genera *Chlorochrysa* and *Tanagrella* and on the other hand to the small-billed genus *Procnopis*. Of the latter Selater (Cat. Birds Brit. Museum, XI, p. 93) remarks "This little group of three species comes very close to *Calliste*, but has a shorter and wider bill and rather longer wings in proportion." The difference in the size and form of the bill between *Procnopis* and the majority of species of *Tangara* is very marked. Unfortunately for the standing of *Procnopis*, however, there are certain species of *Tangara* that in the form of the bill agree essentially with the members of the former group. This is particularly the case with *T. nigroviridis*, which in its small but wide, depressed bill, with weak lower mandible and short gonys, is very similar to *Procnopis*.

In the relative length of the wing it does not differ from the latter genus, while in coloration it bears a strong resemblance to *P. atrocærulea* (the type of the genus).

T. dowi somewhat suggests *T. nigroviridis* in coloration, and while the bill appears to average larger and stouter, yet some individuals agree essentially with the latter. *T. fucosus*, closely allied to *T. dowi*, and *T. cabanisi* (known only from the type specimen), associated with *T. dowi* and *T. nigroviridis* by Sclater, I have not seen. *T. cabanisi*, judging by the colored plate in 'The Ibis' (1868, pl. III), has a much larger and thicker bill than its supposed allies. In *T. heinei* (*atricapilla* auct.) and *T. argentea* the bill is depressed and much swollen laterally, the throat feathers are bifurcate and the sexes are unlike in color. *T. cyanoptera*, while agreeing in the last respect and to a considerable extent in coloration, has a thicker bill. *T. fulvicervix* and *T. melanotis* are small-billed species not very dissimilar to the species of *Procnopis* in color, but the bill is narrower and less depressed.

If *Procnopis* is to be recognized as a genus, *Tangara nigroviridis* must be transferred to it. Even with this change, however, it is extremely doubtful whether the distinction can be maintained, so complete is the intergradation between the two groups. I suggest, therefore, unless we are ready to divide *Tangara* into a number of ill-defined genera, an undertaking of doubtful practicability, that *Procnopis* be united with *Tangara*. If this is done, the latter genus will not be appreciably more heterogeneous in any respect than it is at present.

It may be noted that *Tangara argentea* was originally described as a *Procnopis* in the paper in which the latter genus was described by Cabanis. Also that *Procnopis* was not recognized by other authorities until Sclater (in the British Museum Catalogue) decided that *P. atrocærulea* was more nearly allied to *Diva* (type *D. vassorii*) than to *Calliste* and united it with *Diva* under the older name *Procnopis*.

Under the arrangement suggested the three species of *Procnopis* will stand as:

Tangara vassorii (Boiss.)

Tangara branickii (Tacz.)

Tangara atrocærulea (Tsch.)

W. DEW. MILLER, American Museum of Natural History, New York City.

Early Arrival of the Tree Swallow in Plymouth.—The Tree Swallow is an "early bird" in Plymouth, as elsewhere. But Plymouth seems to be unique, so far as the published records for eastern North America show, as the station of the *earliest* arrival of this "early bird." The average date for six years of first Tree Swallows seen at the Head of the Beach, Plymouth, is March 16. This compares with the usual "first week of April" reports from most places and with the Ipswich (on the other side of Massachusetts Bay) ten-year average of March 28 and with the St. Louis ten-year average of March 24 and with the Washington earliest date seen of

March 28. The inference is, of course, that if the Tree Swallow is watched for by more observers, and if stations as favorable as Plymouth are selected, the Plymouth average will be duplicated or even surpassed.

Following are dates of arrival in Plymouth (Chiltonville — "Head of the Beach"):

1908. Mar. 7. First swallow.
 " 16. A flock. (A mild first week of March.)
1909. " 11. A flock of 20 swallows.
 " 12. Same flock.
 " 17. Snowing. Flock sits on a telephone wire near the beach in p.m. 22°-24° above zero.
 " 18. A cold and blustering morning. No swallows.
 " 19. A few swallows at the beach.
 " 25. A flock of swallows feeding on the bayberries, of which there are a plenty this spring. Very blowy and rough, and from noon a hard rain fell, which increased at night almost to a gale. But not a low temperature.
1910. " 20. A south wind has blown probably for 36 hours. Warm today. Quite a lot of swallows are here. Don't think they were here yesterday.
 " 22. Saw some swallows in the morning at the head of the beach. Also saw two or three swallows in East Middleborough.
1911. " 18. A swallow or two.
 " 22. A number of swallows seen.
 " 23. Quite a lot of Swallows that settled by the hundreds on the bayberries.
 " 24. More swallows today.
 " 26. Swallows lively and plentiful. Two or three days last week were very rough, cold, and wintry, yet the swallows were flying around today. I wonder where and how they pass the cold nights.
1912. " 19. A flock of 50 swallows seen between 11 and 12 o'clock.
1913. " 23. Saw the first swallows — a dozen or more.
1914. Apr. 4. Saw one swallow — also a flock of 8 or 10. Strange that they should be so late this year.
1917. Swallows appeared during the week of March 18, after the snowy conditions resulting from the great storm of March 4 and 5 had disappeared. This storm probably made them late this year. But once arrived in Plymouth, the Tree Swallows seem to come to stay. They hang on in the face of bad conditions and rarely beat a retreat, as they so often do elsewhere. To illustrate: "April 9 was sunny and scarcely coolish. But at 5 A.M. on the 10th a blizzard began, with snow and a hard blow, so that the street cars soon stopped run-

ning on account of the drifts. But I saw three Swallows flying in the morning in the driving snow. It was not, however, a cold storm, although it cleared off cooler and blustering, with a good deal of snow on the ground. Nevertheless, I saw more swallows during the day. Birds in general must be faring hard, although it is not a bitter snap." (I note in my journal of April 12 that there is still a lot of snow on the ground and that the storm must have been of some force because "I hear of great numbers of Shelldrakes in the bay at South Mashpee driven in I suppose by the storm.")

1918. Mar. 18. First swallow.

JOHN A. FARLEY, *Malden, Mass.*

Hybrid Warbler in Missouri.—A hybrid of the Blue and Golden-winged Warblers was collected near Lexington, Mo., May 3, 1919, by my friend, Mr. Clark Salyer. The specimen was collected on one of the heavily wooded bluffs of the Missouri River. With the exception of one particular, the specimen is a Lawrence's Warbler. It has the coloring of the Blue-winged Warbler as a basis, and has the black throat patch of the Lawrence's Warbler, but the black on the cheeks is like the black on the Blue-winged Warbler, not like that of the Golden-winged. In other words, the black does not form an ear patch, but is merely in front of the eye and through it. The specimen is six and one-fourth inches in length,—over an inch longer than either species from which it is derived. It is a male, in excellent condition, and, as a cabinet skin, now forms part of the collection of Mr. Salyer.—E. GORDON ALEXANDER, *Lexington, Mo.*

The Orange-crowned Warbler on Long Island in April.—On April 13, 1919, at Miller Place, Long Island, N. Y., I watched an Orange-crowned Warbler (*Vermivora celata celata*) for some time as it hunted among the buds of some apple trees. It was very active and apparently in full vigor. It was seen under the most favorable conditions, often within ten or twelve feet leaving no doubt in my mind as to its identity. I have occasionally met with this species on Long Island in the fall, but this rather unseasonable occurrence is the first vernal record I have.—A. H. HELME, *Miller Place, Long Island, N. Y.*

Peculiar Brooding of the Black-throated Blue Warbler.—A female *Dendroica caerulescens*, whose nest I found June 19, 1918, in Rowe, Mass., made a unique display of herself as a close-sitting bird. The nest, a beautiful and elaborate structure, was three feet from the ground in a hemlock sapling which was one of a thick clump of the same sort that bordered a wood road. The eyes of the young were open. The female was off the nest when I found it, but when I returned, a quarter of an hour later,

she was on. I got within two feet of her, but she would not fly. To get nearer seemed like "adding insult to injury," so I did not try to stroke her back, as I have done before with a brooding bird. But it was not her bravery that made this close-sitting bird unique; it was the unusual way in which she protected her young from my gaze. She had spread the white feathers of her lower parts out so completely over the young that there was not a vestige now visible of the four young birds that I had found a short time previously filling the nest so full. She "fluffed" herself out so as to hide all traces of the young. For a moment I even thought that during my absence of a few minutes she had brought a great deal of some soft white stuff as additional lining for the nest, as breeding birds sometimes do.

To quote from my journal: "She made a beautiful picture. The whole effect was wonderful. The bird seemed to be sitting in a billowy mass of eider down, or cotton, that swelled, or rather bulged up all around her, a regular 'bed of down.'" This *cærulescens* was a remarkably fearless bird. Two days later I went to the nest again. The young had flown, but were close by. It was nearly dusk in the woods. The female "chipping," and with "shivering" wings, came very close, almost as close as she could get without touching me.—JOHN A. FARLEY, Malden, Mass.

The Yellow-throated Warbler in Central New York.—In view of the fact that *Dendroica dominica* comes into recent "sight record correspondence" (Auk, July 1917, p. 373), it might be unwise to record this species on such evidence, but for the fact that none of the three or four records come from northern, central, or western New York. All previous records are from Long Island. It has hitherto been recorded as follows: The first record is from Crow Hill, Kings County (see Dutcher, 'Auk,' 10, 277; and Lawrence, Ann. Lye. Nat. Hist. of New York, 6, 8). The second record is also from Long Island, Oyster Bay, July 4-8, 1907, a bird of this species discovered by Mrs. E. H. Swan, Jr., identified by Theodore Roosevelt, and recorded in 'Scribner's Magazine,' volume 42, page 387" (Eaton, E. H., Birds of New York, Part 2, p. 424). The third record was made at Brooklyn, N. Y., April 28, 1917, by Edward Fleisher (Bird-Lore, May-June, 1917, No. 3, p. 150). The fourth was made at the same place, a day following, April 29, 1917 ('Auk,' XXXIV, July, 1917, pp. 341-342).

The bird Mr. S. E. R. Simpson and I saw was in high spruce trees one half mile west of Spring Lake, Conquest, Cayuga Co., N. Y. When we first heard it my companion was looking for Myrtle, Black and White, and Black-throated Blue Warblers to complete a list of 95, and I said instinctively, "I guess there is your Myrtle Warbler." "No," he replied, "we had better look at it. It is Yellow-throated Warbler." I felt the determination absurd considering its range, but the bird proved a fine male *Dendroica dominica*, and was clearly seen with glasses (x4) and with naked eye at 25-50 feet. I know the true Yellow-throated Warbler and could see no striking yellow before the eye in this bird. Inasmuch as we had not the

bird in hand, some may consider it venturesome to hold it to be the Sycamore Warbler, yet that is the natural assumption of the student of bird ranges, and my determination, although I employ the caption of "Yellow-throated Warbler." The Sycamore Warbler has never been recorded in the state, and the above position will have to be adopted until a specimen is taken. This Sycamore Warbler with the Golden-winged and Hooded Warblers and other forms of the northern end of Cayuga Lake might tend to substantiate the suspicion that some of the breeding forms and others at the north end of this lake (but absent or rare at the southern end) enter in their migration from Ohio and the west and not directly from the south. The Sycamore Warbler occurs in Indiana, Illinois, Michigan, and in Ohio to Lake Erie, and might stray eastward into the Upper Austral arm along the south shore of Lake Ontario.

The song of this individual hardly impressed us as like the Water-Thrush, of which we had previously heard numerous breeding examples the same day and for two days previous, nor of the Louisiana Water-Thrush, so common here at Ithaca, nor of the form or quality of the Indigobird. It sounded like a louder, fuller, and more ringing song of a Myrtle Warbler. This comparison and our first identification of the song as that of the Myrtle Warbler was made in entire ignorance of Mr. Andrew Allison's characterization of the Myrtle's song as "not unlike that of the Sycamore Warbler," and might be contributory evidence to prove our bird the Sycamore Warbler.—A. H. WRIGHT, *Ithaca, N. Y.*

Nesting of the Myrtle Warbler in Southern Massachusetts.—The breeding of the Myrtle Warbler (*Dendroica coronata*) at Webster, Mass., was an interesting event of the present season. On May 17 I noticed the female carrying nesting material into a group of white pines that stood on the edge of a pine grove of two or three acres. This grove adjoined an open pasture. After considerable search I located the nest 40 feet up in a white pine two feet in diameter. It was near the top of the tree.

On May 29 my friend, E. H. Forbush, and myself climbed the tree and found two eggs in the nest.

The fact that the set was still incomplete after ten days (for on May 18 the female had her nest well along toward completion) is to be accounted for probably by the excessive precipitation and cool, damp, backward weather of the week of May 18. There were very heavy rains on two days, while the general temperature was low throughout the week.

The female sat on her eggs while the tree was climbed and only flew when the nest-limb was jarred.

The nest was 10 feet out on the limb and was snugly set in a crotch. It was well built of rootlets, straws, and the like, and was heavily lined with hens' feathers. A Bluebird's feather was worked into the outside of the nest. The structure was deeply cupped and was very "snug," for its edge all around was built to slightly overhang the interior. The eggs were

speckled at the greater end chiefly, where there was more or less of a ring on a background of grayish white.

This nesting of *D. coronata* at Webster, Mass., in southern Worcester County, on the Connecticut State line, in transition country with fauna almost purely Alleghenian, is of interest. It may be remarked *en passant* that within one-quarter of a mile of this white pine grove, where the Myrtle Warbler had its nest, was a wooded laurel swamp with scattered black spruce, where a Hooded Warbler was in full song (May 23) and a pair of its cousins, *Sylvania canadensis*, were building a nest.

While *D. coronata* has long been known as a summer resident of many of the elevated parts of Massachusetts, although less numerous than either *D. maculosa* or *D. caerulea*, this Webster breeding of the bird appears to be the first recorded case of a nest of the species in Massachusetts.—JOHN A. FARLEY, Malden, Mass.

The Cerulean Warbler (*Dendroica cerulea*) in the Catskills.—Santa Cruz Park is a little community of cottages in the Catskill Mountain woods, a little southwest of the center of Greene County, having an altitude of about 2000 feet. The cottages harmonize well with their surroundings and are not sufficiently obtrusive to seriously affect the natural environment of the mountains. While deciduous trees have rather the upper hand, there is a very formidable rivalry of spruce, balsam, and hemlock.

Arriving here late in May for a month of bird study, almost the first bird which demanded our serious attention was the Cerulean Warbler, hitherto unknown to us.

Between May 29 and June 28, hardly a day passed without giving this evasive bird more or less of our attention, sometimes amounting to several hours in the course of the day.

A bird more difficult to observe I have rarely if ever met with. His life seemed to be confined almost entirely to the tops of the tallest deciduous trees, where he would generally feed, with apparent design, on the side most remote from the would-be observer, exhibiting a wariness not expected on the part of a warbler, and finally leaving the tree, the first intimation of his departure being a more distant song. He never remained in the same tree top more than eight or ten minutes at a time and yet rarely ventured out of hearing distance from the center of his range. Fortunately, he would sometimes take a perch on a bare twig and sing for several minutes, but the perch was always high and generally with the sky as a poor background for observation. Had it not been for the almost incessant singing, being heard almost constantly from daybreak until nearly dark, the task of identification would have seemed hopeless.

The musical exercises of the bird consisted of an alternation of two distinctly different songs, so different indeed that until the bird was caught in the act we never for a moment suspected a single authorship. One song suggested slightly that of the Magnolia Warbler but rather softer, four syllables, though not quite so well defined as in the Magnolia. The other,

for want of something better, might be compared with the song of the Parula Warbler, a short buzzing trill rising in the scale, much louder and less lispy than the song of the Parula. The songs were each of about one second duration, rendered approximately eight or ten times per minute. Altogether the performance was quite musical, in sweetness far above the average warbler song. These two songs were generally alternated with clock-like regularity, though occasionally the bird preferred to dwell upon one or other of his selections for the greater part of the day. Like the Blackpoll Warbler and some others, the beak was opened very wide while singing, a great help in connecting bird and song.

The fact that the bird was so closely confined to a very restricted area gave us great hope of finding a nest, which hope, however, was not realized. Neither did we succeed in identifying a female, but on the 27th of June, the day before we were obliged to leave, our bird was seen carrying food in his beak, which was rather good circumstantial evidence that the Cerulean Warbler was breeding in the Catskills.—S. HARMSTED CHUBB, *New York City*.

Carolina Wren (*Thryothorus l. ludovicianus*) Nesting in Rhode Island.

—On August 1 I arrived for a few weeks stay in Bristol, R. I., and at once was attracted by the notes of a Carolina Wren from a swampy thicket behind the house on Metacom Avenue where I was living. On August 2 I secured a glimpse of both parents and one of the young. This is, I believe, the second record for this species in Bristol, and the fifth for the State, though I have not followed the avifauna of the State for twenty years, and other records may have been made.—R. HEBER HOWE, JR., *Thoreau Museum of Natural History, Concord, Mass.*

A Short-billed Marsh Wren Colony in Central New Hampshire.—

On July 17, 1919, I found a small colony of *Cistothorus stellaris*, probably not numbering over six pairs, in a small and not very wet meadow in Sandwich, N. H. The wrens were in full song. I saw two birds with food in their bills, but was unable to learn whether the young were in or out of the nest, for, although I found five nests, none was occupied, and one was built in 1918. The other four were all fresh made, and green as grass could make them, but were all "fake nests."

Their nests, as a rule, were set nearer the ground than the many nests of the species that I have found in Massachusetts; nor were they in hummocks, which may be explained by the fact that in this meadow there were no hummocks. Two or three of the nests were supported in part by narrow-leaved cat-tails, together with the usual fine grass, instead of by fine grass exclusively, as is so often the case, particularly when a hummock is chosen for a site.

Scarcely more than two miles away, in a sphagnum swamp of mixed growth, where considerable spruce and less balsam grew, a Tennessee Warbler sang incessantly in the dead top of a maple.

This appears to be the most northern reported colony of *C. stellaris* in New Hampshire, while the Tennessee Warbler on the same date seems to be the most southern summer record of this species in the State.— JOHN A. FARLEY, Malden, Mass.

Red-bellied Nuthatch (*Sitta canadensis*) in Alabama.— In 1891 Dr. William C. Avery recorded the capture, on October 4, 1888, of an adult male Red-breasted Nuthatch at Greensboro, Alabama (Am. Field, Vol. XXXV, p. 55, January 17, 1891). As far as known to me, this is the only published record of the occurrence of the species within the State.

On January 30, 1919, I assisted Mr. Lewis S. Golsan in the capture of a male Red-breast about two miles east of Prattville, Alabama, in the wood-pasture of Mr. J. B. Golsan, and at the same time heard another individual calling in the pines near by.

Concerning this species Mr. Golsan writes that he collected a female at the same place on December 22, 1918, and that he saw and heard individuals there from that date until April 23, 1919. Mr. Golsan's actual sight records are as follows: December 22, 1918, one; January 30, 1919, one; February 13, one; March 16, four; March 23, two; April 6, three; April 14, two; April 17, two; April 21, one; April 23, one. The birds were heard almost daily in the pines near the barn lot by Mr. Golsan as he went about his work. A large part of their time was spent searching the cones of *Pinus palustris*, *P. echinata*, and *P. taeda*. Mr. Golsan estimates the number seen and taken at ten individuals.

It seems remarkable that this boreal bird should appear so far south during the mildest winter the entire country has experienced in years. Seldom severe, the late winter and early spring in central Alabama were exceptionally mild. Rather one would have expected Red-breasted Nuthatches here the previous winter, which was as rigorous as the one just past was clement.

In this connection it seems worthy of note that though I observed numbers of White-breasted Nuthatches in the vicinity of Camp Upton, Long Island, during the past winter, and watched especially for Red-breasts, none were seen.— ERNEST G. HOLT, Barachias, Alabama.

The Blue-gray Gnatcatcher on Cape Cod.— On November 9, 1915, in Dennis, Cape Cod, Massachusetts, I saw a Blue-gray Gnatcatcher (*Polioptila c. caerulea*). The locality was about two miles from Cape Cod Bay. It was an Indian summer day with blue haze and a warm sun. The Gnatcatcher remained for a short time in a tangle of vines and blackberry bushes by a wall. As usual the little *Polioptila* was the embodiment of nervousness, a pent-up bit of feathered energy. It continually cocked its head and flirited its tail. Now and then it uttered its short, insect-like, unbird-like note. It was not shy.— JOHN A. FARLEY, Malden, Mass.

Strange Conduct of a Robin.— It may not be fair to the bird to report its conduct to the world ornithological, but an apparently perfectly good

male Robin conducted himself in a most unseemly manner for the greater part of April at the auto station on Belle Isle, the city park of Detroit.

During some very severe weather he came into the station one morning when a door had been left open and was taken care of until the storm abated, when he was permitted to depart. Immediately upon reaching the great outdoors he returned to one of the windows and beat upon it. The matron in charge, under the impression that he wished to come back into the warm room, opened the door, but he flew away. He returned shortly and renewed his attacks upon the window, but when attempts were made to invite him in he left. This action on the part of the bird continued for hours, day after day. He would take a position on the railing surrounding that particular window and dash up on the glass repeatedly, as though engaged in mortal combat, until driven away by some one. No matter how often he would be frightened away he would return so quickly and keep at his one-sided fight so long, it was a wonder that he found time to procure necessary food. An idea of his stay on the railing may be gained from the fact that the droppings underneath accumulated until the platform resembled a hen house.

Finally, by my advice, the window was smeared all over the outside with a chalky substance and the Robin fought it no more, but transferred his attacks to another window near the other end of the station, where he again found his enemy. When this window was allowed to remain open the bird would go away, but he finally discovered that any window in the station furnished an adversary worthy of his prowess, so he continued to fight his shadow. And as three sides of the station are of glass he was kept pretty busy without being able to administer a knockout blow. After each attack the hated enemy would spring up as peppery as before. During the time when the bird was fighting the glass the conduct of the female was most peculiar. She would remain on the lower limb of a nearby tree, occasionally making remarks which might easily be translated as being, "Go after him, old man, he insulted me."

I have often seen or heard of a Robin engaging in fisticuffs with his shadow on a window pane, but I never knew a bird to keep so persistently at it for so long a time.—ETTA S. WILSON, *Detroit, Mich.*

A Three-legged Robin (*Planesticus m. migratorius*).—Early in June of the present year Mr. H. K. Coale of Chicago presented me with the skinned trunk of a young Robin that he had collected, which was found to possess three perfect legs. Two of these limbs were upon the left side, the lower one of the two being functional in all respects, while the other one, articulated above it, was probably of no service to the bird in any way whatever, although it was perfect, even to include all the toes. This specimen I carefully cleaned, and found the following conditions present in the pelvic part of it, all the remaining bones and articulations being perfect and normal:

The sacrum is curved uniformly throughout its length, the external

marginal line of the left side being convex outwards, and presenting some osseous enlargements at the terminations of the transverse processes, especially posteriorly. There is no abnormality of the right hand moiety of this pelvis, and the bones of the limb on that side are in every way normal.

On the left side the skeleton of the limb is normal in every particular, as are all the lower portions of the pelvis, including the acetabulum, which latter affords a perfect articulation for the femur. Surmounting this perfect part, however, there is to be observed the larger portion of the left moiety of a second pelvis which presents various distortions and abnormalities, and these involve the upper parts of the pelvis below it. In the supernumerary bone the ilium is replaced by a tumorous osseous mass, in a direct line above the cotyloid cavity of the inferior pelvis. Backward and downward from this is the second acetabulum on this side, and in this cavity a perfect femur articulates. This is the femur of the *third leg*, and it has been, near its trochanter, completely fractured across, probably during the operation of skinning the specimen. Posterior to these parts in this duplicated structure we find the somewhat aborted hinder portion of the ilium; the large ischiadic foramen, which is complete, and the ischium, likewise complete. The pubic style, however, somewhat broadened, has fused throughout its entire length with the ischium of the pelvis below it, the anterior half of the line of fusion being distinctly indicated by a little ridge. Further than this the specimen offers nothing; but as it stands it is of considerable interest teratologically, while, as in nearly all of these cases, the most important parts have been thrown away. For instance, a careful description of the origin and insertion of the muscles in such a case as this would be a valuable contribution to our at present meager information on such points. This is likewise true of an even more important matter — the distribution of the added nerves, arteries, and veins in these structures, and the general physiology of the limb. On such points as these our literature and information is almost a blank record.

When a taxidermist gets such material, he considers it a wonderful departure from the ordinary, and that the chief thing to be preserved is the skinned specimen showing the supernumerary limb; on the other hand, a one-sided ornithotomist rarely sees anything beyond the necessity of saving the skeleton of the specimen. The science of teratology demands more than this, and we should in the future see well to it that these demands are met. — R. W. SHUFELDT, *Washington, D. C.*

Notes from St. Marks, Fla. *Pelidna a. sakhalina*. RED-BACKED SANDPIPER. — On May 19, 1919, about twenty of these birds were seen on the sand-flats back of our light-house. The summer plumage seemed complete, a broad, intensely black belly-patch standing out in contrast to the enclosing white as a piece of heavy plush. On May 26, a week later, another bunch of about the same number were seen on some flats, none of which showed more than streaks of black. No solid patch.

***Squatarola squatarola*. BLACK-BELLIED PLOVER** — May 19, 1919,

two birds were seen near the lighthouse in brilliant summer attire. The back checkered black and white and a full black "chest protector." May 26 three birds were seen flying at the same locality, but exact condition of moult could not be determined.

Ereunetes mauri. WESTERN SANDPIPER.—About twenty small "peeps" were noted about the lighthouse June 11, 1919; of three collected two were *E. pusillus*, the other *E. mauri* in summer plumage. On June 24, 1913, two specimens of *E. mauri* were taken eight miles west of the lighthouse.

Himantopus mexicanus. BLACK-NECKED STILT.—Five of these birds were along the beach and on the flats near the lighthouse June 12, 1919.

Phaethon americanus. YELLOW-BILLED TROPIC-BIRD.—On May 25, 1919, one of the fishermen reported "The queerest looking bird I ever saw"—about the size and color of a common small Gull (meaning the Common Tern), with a pointed tail about eighteen inches long. While the record is open to question, the occurrence, with such a description from a reliable person, seems worthy of recording.—JOHN WILLIAMS, *St. Marks, Fla.*

Further Notes from Leon Co., Florida.—The four papers of Mr. R. W. Williams (see 'Auk,' 1904, p. 449; 1906, p. 153; 1907, p. 158; 1914, p. 494), separates of which he has most courteously forwarded me, are the standard on the birds of Leon County. In these papers 192 species are recorded, the subsequent capture of the Florida Bob-white ('Auk,' 1916, p. 329) making the total 193.

It was my good fortune to visit Leon County again last spring from March 23-27, and April 1-5. As usual I was for the most part on the shores of Lake Iamonia in the extreme northeastern corner of the county. It is this section that has been worked the least, and as might be expected further observations of interest were made, which are given below. The migration was late, no real flight taking place until April 3. As a matter of record dates are given wherever they are not mentioned by Williams, as a basis for future migration work.

Gavia immer. LOON.—Two birds seen on a small open lake about four miles east of Tallahassee on April 5. "Seen several times on the larger lakes." (Williams.)

194. **Phalacrocorax auritus floridanus.** FLORIDA CORMORANT.—Two birds seen March 26 on Lake Iamonia. The natives know this bird well, which they call the Nigger Goose, and distinguish it from the Water-turkey, which they say is very scarce. They claim that the Cormorant breeds on some islands at the southern end of the lake, arriving the end of March and leaving about the middle of November.

Lophodytes cucullatus. HOODED MERGANSER.—March 24 is the latest recorded date.

Marila collaris. RING-NECKED DUCK.—March 24 given as a record for the latest date.

Butorides v. virescens. GREEN HERON.—Arrived April 2.

Meleagris gallopavo silvestris. WILD TURKEY.—This noble bird still persists in the "gum" swamps along Lake Iamonia. A roost of about fifteen birds on an island in the lake was one of our proudest possessions. Last autumn some strangers visited the island and were reported to have "cleaned out" the roost. A single hen was, however, detected on April 3 in the old locality.

Phloeotomus p. pileatus. PILEATED WOODPECKER.—A pair of these fine birds was located on an island in the lake. The first I have ever found.

195. **Corvus ossifragus.** FISH CROW.—Quite by chance I noticed recently for the first time that Mr. Williams does not list the Fish Crow. It is an abundant resident of the shores and islands of Lake Iamonia, though I have never seen it a quarter of a mile from the lake, nor around any of the other lakes in the county.

Molothrus a. ater. COWBIRD.—Williams states that this bird has mysteriously disappeared from the county since 1893. I certainly had never been able to find it in recent years, so was correspondingly gratified to see a flock of five birds in an old pasture on the southern outskirts of Tallahassee on March 27.

196. **Melospiza l. lincolni.** LINCOLN'S SPARROW.—The morning of March 26 was cloudy, with a strong east wind. Few birds were found in the early morning, so about 10 A.M. I started to wander aimlessly inland through the fields and pine woods. While ascending a hillside covered with broom grass, a sparrow was flushed from the ground, and flew with a quick, jerky flight to a bare little oak tree, where it perched absolutely motionless about fifteen feet away, and three feet from the ground. It was pure habit that made me glance at it through my prism glasses, and I was surely astounded to get the finest view of a Lincoln's Sparrow I ever had. None that I had previously seen acted in so accommodating a manner, suggesting a thrush or a Connecticut Warbler. Perhaps the balmy air of Florida had served to relax its almost preternatural shyness. For fully five minutes we faced each other motionless, but at the first cautious forward step of mine, away it darted, nor was I particularly surprised not to be able to find it again. Unfortunately the early morning had been so poor that I had left my collecting pistol behind. Let the incident point a moral and adorn a tale. There is no published record of the occurrence of this sparrow in Florida, that I can find. In answer to an inquiry of mine, Mr. Oberholser has most kindly written that the Biological Survey has no record either, but has a MS. record of one bird seen.

Vireosylva olivacea. RED-EYED VIREO.—Two birds seen April 3.

Protonotaria citrea. PROTHONOTARY WARBLER.—A single bird April 3.

Vermivora c. celata. ORANGE-CROWNED WARBLER.—This species is a regular winter resident in small numbers. One seen March 26, and another April 3. It should, of course, be found much beyond this date.

Dendroica d. dominica. YELLOW-THROATED WARBLER.—Arrived April 2.

Dendroica discolor. PRAIRIE WARBLER.—Williams says he has no record except for August. As far as type of country and locality are concerned, I can think of no reason why this species should not be a common migrant in the county. One of the first bird notes that fell on my ears as I woke up at daylight on April 3 was the thin, wiry strain of the Prairie Warbler. Careful search revealed three birds around the house. There was another flight of warblers on April 5, when at least six were seen, five in a live oak tree at the same time.—LUDLOW GRISCOM, *American Museum of Natural History, New York.*

Two Interesting Additions to the Collection of the Boston Society of Natural History. **Gavia pacifica.** PACIFIC LOON.—An adult but unsexed specimen in full spring plumage of this very rare wanderer to New England was taken at Hampton Beach, New Hampshire, during May, 1910, by Mr. S. Albert Shaw. Through the generosity of the collector this bird is now in the Society's collection.

Squatarola squatarola. BLACK-BELLIED PLOVER.—Mr. John B. Paine of Weston, Massachusetts, has very kindly presented to the Society an unsexed immature Black-bellied Plover showing no external trace of the hind toe on either foot. It was taken at Chatham, Massachusetts, August 27, 1913.

It is an exceptionally large specimen, having the following measurements: wing, 104; culmen, 15.5; tarsus, 25 mm.—W. SPRAGUE BROOKS, *Boston Society of Natural History.*

Bird Notes from Collins, Erie Co., N. Y.—For several years I have had a small group of Cardinal Grosbeaks, not over four seen at one time, in exactly the same haunts yearly. They seem rather shy and elusive and I have not found the nest, but have seen one female and three males at a time. Others have seen at least three in different places two or three miles away.

They are not proved as nesting in Erie County, but there is no doubt of it in my mind. The Nashville Warbler nests here only casually while of the Canadian, Black-throated Blue, and Junco, I have seen nests or newly fledged young, and in 1915 found a Solitary Vireo building.

I note that the Cardinals eat the fruit of *Celastrus scandens* and *Carpinus carolinensis* in the fall. The Yellow Warblers use the very same bush or tree in which to build, and this year a pair took the old nest and relined it and used it. I never knew them to do this before.

The Parula Warbler nests here, also the Magnolia, Hooded, Blackburnian, Chestnut-sided, Black-throated Green, Louisiana Water-Thrush, and a few Rough-winged Swallows. I do not see it mentioned in food habits of the Chickadee and Downy Woodpecker that the larvæ of the bulbous galls of golden-rod are evidently quite an important part of their food. They drill persistently until they reach the larva, and in early spring I have seen a small flock working on these galls.—ANNE E. PERKINS, *Collins, N. Y.*

Additions to the 'Birds of Liberty County, Ga.' — Owing to an unfortunate misunderstanding several species were omitted at the end of Mr. W. J. Erichson's list in the July 'Auk.' These are given below and follow in regular order at the end of the published list (p. 393).— (EDITOR).

38. **Sitta pusilla.** BROWN-HEADED NUTHATCH.— This confiding little bird inhabits open pine barrens where there is an abundance of dead trees and stubs. They generally select for a nesting site a pine stub from which the bark has not fallen, although, when handy, fence posts are not infrequently used. Four nests of this bird were located, one containing two eggs which were subsequently destroyed, the other three containing five eggs each. The heights varied from twelve inches to seven feet. These nests were almost wholly composed of pine seed-wings, with the exception of a small amount of the silky fiber from the exterior of cocoons and some inner bark of different species of trees, particularly of the cypress. A large amount of the seed-wings is deposited in the nesting hole, and an enormous amount of energy is expended by the birds in the construction of their nests, as, from repeated observations, I have noted that these seed-wings are carried to the hole one at a time. The Brown-headed Nuthatch breeds early, although but a single brood is raised. They are close sitters, and it is necessary at times to remove the sitting bird with the hand. Nesting dates for the county are March 19, March 27 (two nests), and April 3.

39. **Penthestes carolinensis carolinensis.** CAROLINA CHICKADEE.— Simultaneous with the appearance of the down on the stalk of the cinnamon and royal ferns, which occurs during the middle of March, the Chickadee begins nest-building, for this material is used largely by the birds in lining their nests. As far as my observations go, the birds, in gathering the down, always begin at the top of the stalk and work downward. The green moss that collects on the trunks of certain species of hardwoods is also used to a considerable extent, being always placed in the nesting hole first, and upon it the down is deposited. Fur of the rabbit is frequently interwoven with the down, making a snug and warm home. In all of the nests examined there was a noticeable difference in the height of the wall on one side, the difference being in some instances an inch and a half. On leaving the nest the birds cover the eggs with this flap by bending it down. I have yet to find a nest of this species containing eggs which was not covered during the owner's absence.

The Carolina Chickadee's choice of nesting sites is a small, rotten hardwood stump in low, swampy land, although fence posts near dwellings are not infrequently selected. According to my observations this species does not always excavate a hole for itself, deserted holes of the Downy and other woodpeckers and natural cavities in trees being often used.

Nesting dates for the county are: April 3, five eggs; April 5, six eggs; April 12, four eggs; April 17, five eggs. Heights varied from four to twenty-two feet, the nest noted April 17 being at the latter height. All of

these nests were typical, and were located in low land in the immediate vicinity of Allenhurst.

40. *Poliophtila cærulea cærulea*. BLUE-GRAY GNATCATCHER.— The nest of the Blue-Gray Gnatcatcher is among the handsomest specimens of bird architecture. No other species of bird nesting in the south, not even excepting the Hummingbird, constructs a home of such exquisite proportions and beautiful workmanship. This species is locally distributed in the county, being confined principally to heavily timbered swamps, and as a rule nests at considerable heights. On May 3, after long search, I located a nest in a large gum growing in water and in the center of a dense swamp near Allenhurst. It was placed at a height of thirty-two feet, and contained five fresh eggs. Another nest, noted June 22, twenty-three feet high in an ash tree on the edge of the same swamp, contained four apparently heavily incubated eggs. Both nests were saddled on horizontal limbs, and were composed of fine, hair-like rootlets and dried grasses interwoven with plant down, lined with small feathers. They were deeply cupped, shaped like a high cone, and had the entire exterior ornamented with lichens.

41. *Sialia sialis sialis*. BLUEBIRD.— The Bluebird is decidedly a woodland species throughout the county, and is only occasionally seen about populated places, at least during the breeding season. The many burnt-out districts and cut-over lands, in which are numerous stumps and dead trees, afford the bird ideal nesting sites. As a result of these favorable conditions, Bluebirds are abundant in the county. The birds begin nesting early, as I have noted full sets of eggs on April 2. Other dates are April 17, four fresh eggs; April 25, four well-feathered young; May 1, four fresh eggs, and May 18, five eggs. Four eggs comprise the usual clutch, although sets of five are not rare. I have found the nest of this species placed in a slight depression on top of a low stump, although it is rare that deviations from the birds' habit of nesting in holes in stumps excavated by woodpeckers are noted. The nests examined by me were constructed entirely of grasses and rootlets, lined with a few feathers, the material evidently having been hurriedly placed in the hole selected. These nests were in deserted woodpecker holes at heights varying from three to ten feet.— W. J. ERICHSON, *Savannah, Ga.*

Data on the Age of Birds. November 8, 1919, will mark the twentieth anniversary of the formal opening of the New York Zoological Park. In an article in the 'Zoological Society Bulletin' for May, 1919, on 'Our Oldest Specimens,' Raymond L. Ditmars states (p. 61), "No specimen of the bird collection has survived the Park's opening day, although there is a Griffon Vulture living in the collection that has been on exhibition nearly seventeen years, and several of our pelicans have been with us for a period slightly over sixteen years." In this connection it is interesting to recall an article 'On the Comparative Ages to which Birds Live,' by J. H. Gurney,

which appeared in 'The Ibis' for January, 1899, and was reprinted in 'The Osprey' for June of the same year. This article contained data on the longevity of 75 species, more than two-thirds of which exceeded 20 years, and ten of which reached the age of 50 years or more. The oldest birds mentioned in the list (omitting doubtful records) were a Sulphur-crested Cockatoo and a Domestic Goose, each of which attained the age of 80 years. Only five North American species were included in Gurney's list, and apparently data on the ages of our native birds are still very meager.—T. S. PALMER, *Washington, D. C.*

RECENT LITERATURE.

Bent's 'Life Histories of North American Diving Birds.'¹—For almost ten years Mr Bent has been engaged in gathering materials for a work on the life histories of North American birds, under the auspices of the Smithsonian Institution. It was the general impression, and the author's intention at the outset, that the splendid work that the late Major Bendire left unfinished would be carried on to completion. It comes therefore as a distinct surprise to those who were looking forward to another of the portly quartos, on the lines of the two that Bendire published, to find in its stead a modest octavo volume.

Even a cursory examination of the work, however, demonstrates that the change of plan was advisable. The smaller volume is much more easily handled and therefore more practical and generally useful, while the half-tone illustrations with which it abounds are better adapted to the smaller size. Indeed, the only point in which the quarto volume had any advantage was in portraying the eggs, which have, of course, to be of natural size, and appear somewhat crowded on the smaller plates. Furthermore, as we compare the works of Bent and Bendire we realize at once that the interval of twenty-five years that has passed since the last volume of the latter appeared has made it desirable that the life histories there presented be rewritten, in the light of present-day information, so that an entirely new work on a new plan is inevitable.

As we read Mr. Bent's pages we fail to see how his plan could have been improved upon. He divides his subject matter into two main sections, 'Habits' and 'Distribution,' the former with the subheadings: courtship, nesting, eggs, young, plumage, food, behavior, winter, and an introductory paragraph that might well be termed habitat; while under the second heading come: breeding range, winter range, spring migration, fall migration, casual records, and egg dates. Mr. Bent has had the cooperation of about 150 ornithologists in gathering the material upon which his life histories are based, and he has not hesitated also to draw upon the most reliable published accounts when first-hand information was not obtainable. With the card index of the U. S. Biological Survey at his disposal he was able to consult practically every work on North American birds, and due credit is given for every quotation, but we should much prefer foot notes to the method so common among university biologists, and which Mr. Bent has adopted, of citing the year of publication after the author's name and leaving the reader to find the rest in the bibliography at the end of the

¹ Life Histories of North American Diving Birds | . Order Pygipodes. | By | Arthur Cleveland Bent | of Taunton, Massachusetts. | Washington, | Government Printing Office. | 1919. | Smithsonian Institution. | United States National Museum. | Bulletin 107. | pp. i-ix + 1-245, pll. 1-55.

volume. This, however, is a mere matter of detail and does not affect the value of Mr. Bent's life histories which we regard as the most accurate and well-balanced accounts that have yet appeared of the species treated — concise and easy to consult and at the same time very readable and entertaining.

Considering a few of the details, we find under migration, inclusive dates showing the general time of occurrence in a number of States in various parts of the country. As the author explains, the attempt has been made to show only the general movements of the species, more detail in a work of this sort being manifestly impossible. The breeding and winter ranges are sketched out with much more detail and have the advantage of having been read and revised by Mr. J. H. Fleming. In stating the measurements of eggs a rather novel method has been employed. The average of a large number of specimens is given first, followed by the dimensions of the four eggs which exhibit the extremes of length and breadth. One editorial practise which is adopted throughout the work, but with which we imagine the author had nothing to do, is that of printing the English names of the species entirely in lower case. This may be all right in general literature, where the practise originated, but in a work on birds there is no more reason for decapitalizing the bird names than those of countries or authors. Next thing we know another practise of the literary magazines, that of writing generic names with a small initial letter, will be forced upon us.

The illustrations of Mr. Bent's work deserve special mention. There are 43 half-tone plates from photographs, usually two views to a plate, illustrating the nest, habitat, and often the young or adult birds. Most of the photographs are published for the first time, but there is one view of a colony of Murres which appeared previously in 'The Auk' for 1917. In the latter place it is said to have been taken on Outer Island, Canadian Labrador, while now the locality is given as Cape Whittle, Quebec. Both happen to be correct, and those who think that bird nomenclature is the only kind that is subject to change and deplore the fact, may take heart. There are also 12 excellent plates of eggs in colors, one or more eggs of each species being shown, except the Great Auk, the egg of which forms the frontispiece to the volume. These are photographs of the eggs themselves reproduced by the three color process and are wonderful examples of this kind of illustration. Their appearance could, however, have been much improved by arranging all the figures in the same position, instead of vertical, horizontal, right side up and upside down, as has been done.

As the title of the work shows, this volume covers only the Grebes, Loons, and Auks — thirty-six species and subspecies in all. Anyone familiar with the meager accounts that we have heretofore had of many of these species and the remoteness of their breeding areas will appreciate the magnitude of Mr. Bent's task in preparing such adequate sketches as he has presented and will realize that he and his assistant, Mr. F. Seymour Hersey, have had to go far afield to gather the necessary material, while the

aid of numerous explorers of the far north has had to be sought to secure the series of photographs which has been here reproduced. Messrs. Macmillan and Ekblaw, of the American Museum's Crocker Land Expedition, were especially generous in this connection.

We have no doubt that while gathering the material presented in this volume Mr. Bent has also secured the bulk of the information necessary for the treatment of many other groups, and we trust that other 'Life Histories' will follow at frequent intervals.

It is obviously the intention of the U. S. National Museum authorities to issue each set of 'Life Histories' as a separate work, since there is no general title and nothing to indicate that other parts will appear, except an incidental reference by the author to "subsequent parts" in the introduction.

Just as Bendire's work was a decided improvement upon the unfinished work of Brewer (1857), so Bent has made a great advance over Bendire, and his 'Life Histories' will, we feel, be for many years the authoritative work on the subject, forming an admirable parallel series to the technical systematic volumes of Ridgway's 'Birds of North and Middle America.'

Let all ornithologists read carefully the last part of Mr. Bent's introduction, and if they have any information on any of the remaining species of water birds that may be of assistance to him, let them send it on at once. And let the author make all speed with his remaining parts. Two works of the kind have been left unfinished, but on the plan he has adopted and with the cooperation that is offered him, he should easily bring these life histories to a completion and establish another milestone in these progress of American ornithology.—W. S.

Ridgway's 'The Birds of North and Middle America,' Part VIII.¹—

This long expected part of Mr. Ridgway's great work has at last appeared, having been long held up by war conditions. It is entirely devoted to a consideration of the Charadriiformes or Plover-like birds, in which group

¹ The Birds of North and Middle America: A Descriptive Catalogue of the Higher Groups, Genera, Species, and Subspecies of Birds Known to Occur in North America, from the Arctic Lands to the Isthmus of Panama, the West Indies and Other Islands of the Caribbean Sea, and the Galapagos Archipelago. By Robert Ridgway, Curator, Division of Birds. Part VIII.

Family Jacanidae — The Jacanas.

Family Cedicnemidae — The Thick-knees.

Family Hematopodidae — The Oyster-catchers.

Family Arenariidae — The Turnstones.

Family Aphrizonidae — The Surf Birds.

Family Charadriidae — The Plovers.

Family Scolopacidae — The Snipes.

Family Phalaropodidae — The Phalaropes.

Family Recurvirostridae — The Avocets and Stilts.

Family Rynchopidae — The Skimmers.

Family Sternidae — The Terns.

Family Laridae — The Gulls.

Family Stercorariidae — The Skuas.

Family Alcidae — The Auks.

Washington: Government Printing Office. 1919. pp. i-xvi+1-852, pl. i-xxxiv. (reported as published June, 1919, but not received until September 4).

are included the Gulls, Terns, Skimmers, Skuas, and Auks. The method of treatment follows closely that of the previous volumes and the high standard there set is well maintained. As the birds here considered break up less easily into geographical races, there are fewer new forms proposed than in the preceding volumes, but numerous changes in nomenclature are adopted and a number of new genera are accepted. The numerous new genera and subspecies proposed by Mr. Gregory M. Mathews in his 'Birds of Australia' are considered, but only a few are accepted, which is gratifying to those who, like the reviewer, have felt that Mr. Mathews had gone entirely too far. Mr. Ridgway is not influenced by prejudice in such questions, but gives to each case a fair and unbiased consideration.

The only new forms proposed in the present volume are *Pagolla wilsonia beldingi* (p. 112), Lower California; *P. w. cinnamomina* (p. 113), Sabanilla, Colombia; and *Sterna anatheta nelsoni* (p. 514), Guerrero, Mexico; while one new genus, *Neoglottis* (p. 329), is proposed for the Yellow-legs. Other forms admitted which are additional to those in the A. O. U. 'Check-List' are: *Numenius americanus occidentalis* (Woodhouse), *Sternula antillarum browni* Mearns, *Larus thayeri* Brooks, and *Uria ringvia* Brünn. Owing to the subdivision of the species into several races, *Jacana spinosa* of the 'Check-List' becomes *J. s. gymnostoma* (Wagl.), while *Sterna anatheta* becomes *S. a. recognita* Mathews, *Pisobia aurita* becomes *P. acuminata*, following Mathews' explanation of the error in identification of the plate upon which the name was based, and *Calidris leucophæa* becomes *C. alba* (cf. Auk, 1912 p. 205), while *Pisobia damacensis* becomes *P. subminuta* (Middend.), and *Hematopus fraseri* is regarded as a subspecies of *H. palliatus*.

Following the fixation of Linnæan types by the International Commission, *Charadrius* is shifted from the Golden Plovers to the "Ring-necks," the former becoming *Pluvialis*, while *Tringa* is now the generic name of the Solitary Sandpiper, the Knot being known as *Canutus*. On account of preoccupation, *Ochthodromus* becomes *Pagolla*, *Macrorhamphus* becomes *Limnodromus*. *Plautus* is found to date from Gunnerus, 1761, by whom it was used for the Little Auk, so that it replaces *Alle*, while the Great Auk becomes *Pinguinus*, showing that even extinct birds are not safe from the operations of the laws of nomenclature.

The following subgenera of the 'Check-List' are elevated to generic rank: *Endomychura*, *Ciceronia*, *Alcella*, *Hydroprogne*, *Thalasseus*, and *Sternula*, while *Larus* is broken up into *Larus*, *Chroicocephalus*, *Hydrocoleus*, and *Blasipus*; and *Numenius*, into *Numenius*, *Phæopus*, and *Mesoscolopaz*, while *Vetola* is used for the Godwits other than *L. limosa*, and *Coprotheres* for the Pomarine Jaeger.

According to the main text of the work, *Heteroscelus* is regarded as not invalidated by the earlier *Heteroscelis* and takes the place of *Heteractitis*, but on another page *Chlidonia* is allowed to invalidate *Chlidonias* Rafinesque, which hardly seems to be a consistent application of the rules. It is but fair to mention, however, that Mr. Ridgway states in the addenda

that he rejects *Chlidonias* because published in a newspaper, but at the same time names are accepted from foreign journals which differ little if at all in character from that in which Rafinesque published his genus.

Among forms rejected by Mr. Ridgway we notice *Squatarola squatarola cynosura* Thayer and Bangs, while our two species of Yellowlegs which Dr. Oberholser, following Mathews, regards as belonging to two different genera Mr. Ridgway finds to be strictly congeneric. It is very gratifying to have his fair and unbiased opinion on this and a number of other recently proposed changes which will have to be decided some day by the A. O. U. Committee.

We are pleased to learn from the preface that work is already in progress on Part IX, which will include the Cranes, Gallinaceous Birds, and Birds of Prey, leaving the remaining families for Part X. We sincerely hope that Mr. Ridgway will be able to complete these two volumes in the near future and round out what will for a long time rank as the most important systematic work on American birds.— W. S.

Witherby's 'A Practical Handbook of British Birds.' — Two more parts of this excellent work¹ have appeared since our previous notice (Auk, 1919, p. 432), covering the remainder of the Fringillidæ, the Alaudidæ, and most of the Motacillidæ. The standard set in the first part is admirably maintained and a vast amount of accurate information is presented in a concise form. The colored plates, which are most attractively printed, represent the heads of Buntings and Wagtails and a group of Crossbills with nest and young, while the uncolored halftone plates of Redpolls and of young Larks and Pipits are exceedingly well drawn, to show the differences in plumage, while the printing gives a remarkably soft effect. The Redpoll plate may be consulted with profit by American bird students who desire to become better acquainted with the appearance of the several boreal forms which occasionally visit our northern States in winter.

We note that Mr. Witherby rejects Kleinschmidt's name *hostilis* for the British House Sparrow, which is the same race as that which we have in America. The only way in which it was claimed that it differed from the continental race was in its smaller size, but Mr. Witherby finds that the average difference in length of wing is less than 3 mm. and that of 90 individuals only 17 could be certainly distinguished by their size. Dr. Oberholser (Auk, 1917, p. 329) accepted Kleinschmidt's name without presenting any corroborative evidence, but in view of Mr. Witherby's investigations we may safely retain *domesticus* as the name of our "English Sparrow." — W. S.

¹ A Practical Handbook of British Birds, Edited by H. F. Witherby. Part 2 (pp. 68-128), April 30, and Part 3 (pp. 129-208), June 18, 1919. Price 4s. net per part. In 18 parts. Witherby & Co., 326 High Holborn, W. C. I., London.

Roberts on Minnesota Birds.—Dr. Roberts has contributed a valuable paper¹ to the Report of the State Game and Fish Commission, on 'The Water Birds of Minnesota, Past and Present.' It is replete with reminiscences of the water-bird life of earlier years gathered from Dr. Roberts' personal experiences, which date back to 1875, and those of others. The style of treatment of the several families varies somewhat, the Grebes, Ducks, Gulls, etc., being considered in groups, while in the case of the shore-birds each species is discussed separately. The status of the rarer species is carefully considered and much important detailed information is made available to the ornithologist, while the main object of the paper—to present information of interest and value to the general public and the sportsman in particular—is not lost sight of.

Another recent publication² of Dr. Roberts is entitled 'A Review of the Ornithology of Minnesota' and is intended as an aid to students in the University of Minnesota and to others interested in the study of the birds of the State. There is an annotated list of species occurring regularly in Minnesota, another of the rare or accidental species, as well as of the introduced, unsettled, and extirpated species, a discussion on vanishing birds, and a hypothetical list of birds recorded from Minnesota, but of which no local specimens have been preserved. Other chapters treat of bird laws, wild life refuges, and an abridged bibliography of Minnesota ornithology. The pamphlet is full of excellent half-tone illustrations from photographs by the author, whose ability as a bird photographer is well known.

A faunal map of the State is also included, in which we find it divided into Canadian, Alleghanian, "Pseudo-Campestrian," and "Pseudo-Carolinian." While we realize the difficulty of drawing satisfactory faunal boundaries where several zones converge, we fail to see the advantage of coining new names. It would seem better to adhere to the nomenclature of the Biological Survey or other recognized authority and to explain in annotations that the zones as they occur in the region under discussion are dilute, not typical, etc. Dr. Roberts is, however, by no means alone in the practise that he has adopted.—W. S.

Second Ten Year Index to the Condor.³—The Cooper Ornithological Club has published as Pacific Coast Avifauna, No. 13, a second ten-year index to 'The Condor,' covering the years 1909–1918, by J. R. Pemberton.

¹ Water Birds of Minnesota, Past and Present. By Thomas S. Roberts, M. D., Curator Zoological Museum, University of Minnesota. Extracted from the Biennial Report of the State Game and Fish Commission of Minnesota, for the Biennial Period Ending July 31, 1918. pp. 56–91.

² A Review of the Ornithology of Minnesota. By Thomas Sadler Roberts, M. D., Professor of Ornithology and Curator of the Zoological Museum in the University of Minnesota. Research Publications of the University of Minnesota. Vol. VIII, No. 2. May, 1919. pp. 1–100. Addendum and Introduction. Price 25 cents.

³ Second Ten Year Index to the Condor, Volumes XI–XX, 1909–1918. By J. R. Pemberton. Pacific Coast Avifauna, Number 13. Hollywood, California. August 15, 1919. pp. 1–92. Cooper Ornithological Club.

It follows essentially the plan of the 'Auk' index, except that the subheadings under which the references are arranged are not italicized, while the volumes are indicated by number instead of year and are not printed in heavy-faced type. The use of italic would, we think, have made it easier for the eye to catch the desired reference, but that is a minor point. The compiler has done his work well and is to be congratulated upon the completion of a thankless task, but one that will save time and trouble for hundreds of others who may have occasion in the future to consult these volumes of 'The Condor.' The value of such an index as Mr. Pemberton has prepared is emphasized in a summary of such publications, which appears in 'Notes and News' of the present issue of 'The Auk.'

Besides the Index proper there is a list of persons mentioned in the 'First Ten-Year Index,' but whose names were not there given in full. The missing data have now been supplied largely by Dr. T. S. Palmer and the names now appear in complete form. Such corrected lists almost invariably contain new errors, and we notice in this instance that Dr. W. L. Ralph's name appears as 'Rolph,' while that of Mr. R. P. Sharples has an additional 's.' Both of these were correctly spelled in the first index. It goes without saying that everyone who possesses a file of 'The Condor' must have this volume.—W. S.

Riley on New Birds from Celebes and Java.¹—A further study of the collection of Celebes birds made recently by Mr. H. C. Raven (cf. Auk, 1919, p. 302) has revealed five apparently unnamed forms from that island and one from Java. These are described by Mr. Riley as follows: from Java, *Ezcalfactoria chinensis palmeri* (p. 93); from Celebes, *Anas superciliosa perna* (p. 93), *Megalurus celebensis* (p. 94), *Dicruopsis montana* (p. 94), *Pachycephala pluviosa* (p. 95), and *Zosterops atrifrons* (p. 95).—W. S.

Chubb on South American Birds.—The second instalment of Mr. Chubb's notes on South American collections in the British Museum² covers all the families from the Grebes to the Raptores of Sharpe's 'Hand List.' It consists mainly of citation of specimens of interest either from locality or condition of plumage, but one form is described as new *Oreophilus ruficollis simonsi* (p. 262) from Challapata, Bolivia.—W. S.

Lonnberg on Hybrid Gulls.—In a recent paper³ Dr. Lonnberg describes some Hybrid Gulls which were bred in the Zoological Garden at Skanes, Sweden, from the crossing of a male *Larus fuscus* and a female

¹ Six New Birds from Celebes and Java. By J. H. Riley. Proc. Biol. Soc. Washington, Vol. 32, pp. 93-96, May 20, 1919.

² Notes on Collections of Birds in the British Museum, from Ecuador, Peru, Bolivia, and Argentina. Part II. Podicipediformes—Accipitriformes. By Charles Chubb. The Ibis, April, 1919, pp. 256-290.

³ Hybrid Gulls. By Einar Lonnberg. With three plates and six figures in the text. Archiv. for Zoologik. Svenska Vetenskapsakad. Band 12, No. 7. pp. 1-22. 1919.

L. leucopterus and also some hybrids between *L. marinus* and *L. glaucus* (= *hyperboreus*) reared at the Zoological Garden at Copenhagen.

Three plates in color of the former hybrids are given, showing them in several stages of plumage, from juvenal to adult, while there are also diagrams of the coloration of the wing tips. In connection with the second hybrid, Mr. H. Winge is quoted as suspecting a hybrid origin for the rare *Larus nelsoni*, and there is a description of a supposed wild hybrid *L. marinus* x *L. glaucus* taken at Upernavik, Greenland.

This paper should be consulted by students of the Laridæ, as it may throw light upon some of the still unsettled problems regarding the relationship of certain species of gulls.—W. S.

Recent Papers by Oberholser.—Six papers by Dr. Oberholser have recently appeared in the 'Proceedings of the U. S. National Museum.' One of these¹ is a review of the species of the genus *Nannus*, comprising our Winter Wren and the common Wren of Europe and their allies. Dr. Oberholser recognizes no less than thirty-six forms of these birds, all of which he regards as subspecies of *N. troglodytes*. The five American species and subspecies of the A. O. U. 'Check-List' will therefore appear as *Nannus troglodytes hiemalis*, etc., if his views are to be followed. Furthermore, his studies of the Alaskan birds leads him to recognize three new forms: *N. t. kiskensis* (p. 228) from Kiska Island, *N. t. tanagensis* (p. 230), Tanaga Island, and *N. t. petrophilus* (p. 232), Unalaska Island.

The birds of the Tambelan Islands, China Sea² form the subject of another paper based upon collections of Dr. W. L. Abbott. Twenty-two species are listed, of which *Orthorhamphus magnirostris scommophorus* (p. 133) is described as new.

Dr. Abbott's collections from Pulo Taya, south eastern Sumatra, are also described by Dr. Oberholser³ ten species being listed, of which *Lamprocorax panayensis richmondi* (p. 272) and *Cinnyris ornata microleuca* (p. 273) are new.

In a revision of the races of the White-collared Kingfisher, *Sauropatis chloris*,⁴ Dr. Oberholser recognizes twenty-four subspecies, the new ones being: *S. c. palmeri* (p. 369), Mt. Salak, Java; *S. c. azela* (p. 377), Engano Island, W. Sumatra; *S. c. chloroptera* (p. 379), Simalur Island; *S. c. amphiryta* (p. 382), Nias Island; and *S. c. hyperpontia* (p. 386), Vate Island, New Hebrides.

¹ Notes on the Wrens of the Genus *Nannus* Billberg. By Harry C. Oberholser. Proc. U. S. National Museum, Vol. 55, pp. 223-236. 1919.

² The Birds of the Tambelan Islands, South China Sea. By Harry C. Oberholser. Ibid., pp. 129-143.

³ Notes on Birds Collected by Dr. W. L. Abbott on Pulo Taya, Berhala Strait, South-eastern Sumatra. By Harry C. Oberholser. Ibid., pp. 267-274.

⁴ A Revision of the Subspecies of the White-collared Kingfisher, *Sauropatis chloris* (Boddæ). By Harry C. Oberholser. Ibid., pp. 351-395.

A study of a series of the Nicobar Megapode induces Dr Oberholser¹ to recognize two races, *Megapodius nicobariensis abbotti* (p. 400) from Little Nicobar being described as new. It occurs also on Great Nicobar, while the typical form is restricted to the middle and northern islands of the group.

Dr. Abbott's second collection from Simalur Island, Sumatra, consists of 38 species, which are listed by Dr. Oberholser,² *Hypotaenidia striata reliqua* (p. 476) being the only novelty.

None of the recent papers from the National Museum 'Proceedings' are dated except with the year, which is likely to cause much trouble in the future. If it was impracticable during war times to print the date on the separates, it surely could have been added with a rubber stamp before they were mailed. So much time is wasted today in ascertaining the actual dates of publication of old works that it is disheartening to find one of our leading scientific institutions reverting to this careless practice.—W. S.

Captain S. A. White's Explorations in Australia.³—Captain White, who has contributed so many valuable articles to 'The Emu' and other Australian scientific journals, has also published two little booklets, reprinted from 'The Register' and illustrated by many half-tones from photographs, which have just come to our attention.

One is entitled 'The Gawler Range. An Ornithological Expedition' and the other 'Ooldea on the East-West Railway, On the Flooded Murray River and Other Sketches.'⁴ They are most interesting accounts of travel in the wilds of the Australian continent and are replete with observations on bird life.—W. S.

Bangs and Penard's 'Critical Bird Notes.'⁵—In the process of their studies of the Lafresnaye Collection of birds recently presented by the Boston Society of Natural History to the Museum of Comparative Zoology, Messrs. Bangs and Penard have discovered the necessity for various changes in names, recognition of new races, etc., which are presented in the present paper in advance of their general report on the Lafresnaye collection. The new forms described are: *Herpetotheres cachinnans queribundus* (p. 23), Pernambuco, Brazil; *Eupsittula astec vicinalis* (p. 24), Tamaulipas, Mexico; *Synallaxis brachyurus chapmani* (p. 25), Jiminez; Colombia; *Dendrocincla lafresnaye christiani* (p. 25), Pavas, Colombia,

¹The Races of the Nicobar Megapode, *Megapodius nicobariensis* Blyth. By Harry C. Oberholser. Ibid., pp. 399-402.

²Notes on Dr. W. L. Abbott's Second Collection of Birds from Simalur Island, Western Sumatra. By Harry C. Oberholser. Ibid., pp. 473-498.

³The Gawler Ranges. An Ornithological Expedition. By Capt. S. A. White. Adelaide. 1913. pp. 1-58.

⁴Ooldea, on the East-West Railway, On the Flooded Murray River and Other Sketches. By Capt. S. A. White. Reprinted from The Register. pp. 1-88.

⁵Some Critical Notes on Birds. By Outram Bangs and Thomas E. Penard. Bull. Museum Comp. Zool., Vol. LXIII, No. 2. June, 1919. pp. 21-40.

Picolaptes affinis lignicida (p. 26), Tamaulipas, Mexico; *Salpator striatipictus furax* (p. 32), W. Costa Rica, and *S. s. speratus* (p. 33), Pearl Islands, Panama, and *Cissilopha sanblasiana nelsoni* (p. 40), Colima, Mexico. *Tanagra lauta* (p. 35) is proposed for the well-known "*Euphonia hirundinacea*" auct., which proved not to be Lesson's bird, and *T. l. proba* (p. 35) is proposed for *T. gnatho* auct. nec Licht., while the new generic name *Cnemoscopus* (p. 38) is established for *Arremon rubrirostris* Lafr.

Mr. Bangs¹ has also recently separated the Philippine Striated Grass Warbler as a new form, *Megalurus palustris forbesi* (p. 61).—W. S.

Cassinia for 1918.²—This publication of the Delaware Valley Ornithological Club contains an article on the birthplace of John Cassin by F. H. Shelton, with a half-tone illustration of the Cassin homestead, while some additional notes regarding the life of the ornithologist are presented, showing that his interest in natural history, especially botany, had been well developed even during his school days.

Extracts from an old manuscript journal of a Swedish missionary, Andreas Hesselius, compiled some years ago by Charles J. Pennock, form the other leading article and give observations on bird life, etc., in the vicinity of Wilmington, Del., in 1711. This manuscript is one of the very earliest contributions to the ornithology of the Delaware Valley.

The usual migration report is presented as well as the Abstract of Proceedings and Bibliography. The Club had twenty-five of its members in the national service and was forced by war conditions to cancel some of its meetings, but it managed to keep up its regular activities, and is now in a more prosperous condition than before.—W. S.

Gladstone's 'Birds and the War.'³—Mr. Gladstone's aim in this little book is to present such information as he was able to gather during the four years of the European War regarding its effect upon and relation to bird life. The subject is far more complicated than one would at first imagine, as can be seen from a glance at the chapter headings of the work. These are grouped under four titles: (1) Utility of Birds, as messengers, crop protectors and food; (2) Suffering of Birds in the War, captive birds, sea birds and effect of air craft and air raids; (3) Behaviour of Birds in the War Zone; (4) Effect of the War on Birds, migration and change of habits.

As we glance through the pages of this interesting little volume we learn that during some engagements as many as a thousand homing pigeons were used by the British to carry messages and that the birds frequently flew

¹ A New Striated Grass Warbler from the Philippines. By Outram Bangs. Proc. New England Zool. Club. Vol. VII, pp. 5-6. June 6, 1919.

² Cassinia. A Bird Annual. Proceedings of the Delaware Valley Ornithological Club. 1918 [April, 1919], pp. 1-51. Price 50 cents.

³ Birds and the War. By Hugh S. Gladstone, M. A., F. R. S. E., F. Z. S., etc. Skeffington & Son, Ltd., 34 Southampton Street, Strand, W. C. 2. London, 1919. 12 mo. pp. i-xviii+1-169. 17 half-tone plates. Price 5s. net.

through gas clouds and barrage after all other means of communication had failed. Few, we imagine, realized the extent of the 'Pigeon Service' or that the United States had a similar organization with which at least one ornithologist, Mr. F. C. Lincoln, of the Colorado Museum, was connected. Mr. Gladstone also describes the use of Canaries, which are much more sensitive to poison gases than man, as a means of detecting the presence of gas in tunnelling operations at the front, while singing Canaries were used extensively on ambulance trains to cheer up the wounded soldiers. The controversy between the farmers and the bird protective societies as to whether birds, especially pheasants, were of more value during war times as food or as crop protectors, was hotly waged and resulted in some temporary modifications in the game regulations.

Mr. Gladstone's evidence is that air raids terrified some birds but not others, while sea birds that were at first frightened by the air planes soon became accustomed to them. Neither of these factors seems to have caused any actual destruction of bird life, but the sinking of oil ships by the submarines was a source of real danger, and large numbers of ducks and other sea birds perished from their plumage becoming hopelessly caked with the oil, so that flight was impossible. On the actual battlefield in France the most reliable testimony is to the effect that the birds were but little affected by the terrific upheaval going on around them, and returned again to nest in the most devastated spots. Of course local conditions affected them to some extent, but generally speaking they seemed indifferent to the noise of battle. Mr. Gladstone in this connection cites Charles Waterton to the effect that the noise of a gun is the one sound to which birds never become accustomed, a theory which the war has pretty well disproved.

Upon migration and habits the war seems to have had little or no effect, although the destruction of large forest areas has, as in all cases of deforestation, affected the presence or abundance of species dependent upon such environment for their existence.

Mr. Gladstone has done a good work in collecting the information presented in this volume, which is not only an important record but a valuable contribution to bird behavior and an exceedingly interesting book for the general reader.—W. S.

Mathews' 'The Birds of Australia.'¹—The latest part of Mr. Mathews' sumptuous work concludes the fifth volume and also completes the treatment of the non-passerine birds, and the author takes this opportunity to add several species omitted from various preceding parts as well as several appendices, etc.

The part opens with the completion of the account of the Coucal, which includes a description of *Polophilus phasianinus melvillensis* (p. 391), and is followed by a consideration of that typically Australian group, the Lyre-

¹The Birds of Australia. By Gregory M. Mathews. Volume VII, Part V. July 10, 1919. pp. 385-499. + i-xii [Introduction, etc., to Vol. V.].

birds. The biographical treatment is full and interesting, and the author continues to refer the *Menura alberti* to the separate genus *Harriwhitea*, which he recently established for it.

Following this come plates with text of *Globicera pacifica*, *Reinholdia reinholdi*, *Pterodroma inexpectata*, to which by the way he refers *Oestrelata fischeri* [sic] Ridgway and *E. scalaris* Brewster; *Diomedea chionoptera* and *Psephotellus chrysoterygius*.

These follow right after the Lyre-birds without any separate heading or anything to show the general reader that they do not belong to that family. Indeed, in the 'Contents' the Pigeon is so included, while all the others are listed under the genus *Reinholdia*! They could appropriately have been designated Appendix I. There is also a figure of a Cuckoo on the Pigeon plate to which we find no reference whatever, and stranger still a paragraph at the end of the text of the Parrot (*Psephotellus*) marked 'Addenda,' which deals with the nomenclature of a genus of Weaver Finches, a family that will not be considered until one of the last parts of the work.

We are forced to the opinion that a lot of supplementary material has been printed just as it came to hand, without proper editing or allocation, and this opinion is strengthened by a perusal of the other appendices. That designated 'Appendix A,' while it has no heading, is apparently a list of papers containing Mr. Mathews' descriptions of new Australian birds and a list of extralimital genera, species and subspecies described by him. The first section of the latter consists of new genera proposed in 'The Birds of Australia,' followed by another entitled "Other Genera," by which is apparently meant genera proposed in other works. There are four of these lists with the names arranged in the order in which they occur, but why they were not merged into one, with the names arranged alphabetically, we are at a loss to understand.

'Appendix B' is one of the most important contributions to ornithological bibliography that has appeared for some time, being a list of over 150 important ornithological works, with exact dates of publication or references to sources where this information may be obtained. Mr. Mathews has, as is well known, devoted a great deal of time to working out the history of the publication of the older ornithological works and has here generously placed at the disposal of others the results of his labors. To make the list still more accurate, it was submitted to Dr. Charles W. Richmond for criticism and correction, but here again the lamentable lack of editorial supervision which characterizes this part of the work is again in evidence. For some reason, Dr. Richmond's corrections and comments are not interpolated where they belong, but are printed all together as 'Addenda to Appendix B,' so that unless one looks in both lists for every publication he is liable to get erroneous information. In view of the great demand for the information contained in this appendix and the comparatively few persons who will have access to it in its present location, we trust that Mr. Mathews may in the near future consider pub-

lishing it in revised form in a single list as a number of 'The Austral Avian Record,' or in some journal where it would be generally available.— W. S.

Wetmore on Lead Poisoning in Waterfowl.— This is a report of especial interest to gunners and gun clubs. The birds that are affected pick up shot about the shooting grounds, where a considerable amount has naturally accumulated. In one marsh in Utah it was estimated that 75,000 shot gun shells are used each season, each of which contains about an ounce of shot, so that the accumulation is very great, and experimental sifting of the mud where the ducks fed discovered shot always present. Experiments on captive birds showed that six pellets of No. 6 shot were sufficient to cause the death of a Mallard. While magnesia sulphate acts as a cure there is apparently no way to check the poisoning, and attention of gunners is called to the lead poisoning so that the symptoms may be understood by persons finding birds so affected. The general results of this investigation have already been published in the Journal of the Washington Academy of Sciences, June 4, 1918.— W. S.

French's 'The Passenger Pigeon in Pennsylvania.'²— The title of this little book is slightly misleading, as fully half of the text is occupied with Indian and forest lore of Pennsylvania and accounts of the Passenger Pigeon in other parts of the United States, from Wilson, Audubon, Cooper, etc., as well as accounts of pigeons in general compiled from not very accurate sources. The portions devoted to the Passenger Pigeon in Pennsylvania are scattered through the volume, separated by chapters and paragraphs dealing with other topics, with a total lack of system or plan. They are of very unequal value, some from old pigeon hunters written in their declining years when memory is not always to be trusted, others consisting of newspaper articles reprinted verbatim and open to the usual criticism that attaches to such publications.

The best chapter is that by Col. H. W. Shoemaker on 'The Passenger Pigeon — Its Last Phase,' in which the final disappearance of the species is sketched and the last alleged observations enumerated. Even here, however, no mention is made of the last specimens actually secured in the state.

Some of the information contained in the book is absolutely erroneous, as for instance, the statement that two eggs constituted a clutch, when we have the testimony of reliable ornithologists from the time of Alexander Wilson down, that only one egg was laid.

¹ Lead Poisoning in Waterfowl. By Alexander Wetmore. Bulletin 793, U. S. Department of Agriculture. pp. 1-12. July 31, 1919.

² The Passenger Pigeon in Pennsylvania. Its Remarkable History, Habits and Extinction, with Interesting Side Lights on the Folk and Forest Lore of the Alleghanian Region of the Old Keystone State. By John C. French. Altoona, Pa. 1919. pp. 1-257, numerous half-tone illustrations. For sale at the Franklin Bookshop, 920 Walnut St., Philadelphia. Price, \$4.00.

While Mr. French's work contains much interesting reading, it cannot be considered in the same class as Merston's well-known work or even Col. Paxson's little pamphlet, as an accurate account of the Passenger Pigeon.

There are two valuable historical illustrations, one of a stool-pigeon basket and the other of a pair of pincers used for twisting the necks of the birds caught in the nets. The other plates are portraits of old pigeon hunters or others mentioned in the book.—W. S.

Economic Ornithology and Bird Protection.—The U. S. Department of Agriculture has issued the usual synopsis of the Game Laws for 1919, compiled this year by G. A. Lawyer and F. L. Earnshaw,¹ while another pamphlet² by the former author explains the present status of the Federal protection of migratory birds and the Canadian treaty. Another important treatise on this same subject is U. S. Attorney, Francis M. Wilson's brief in the court action against the Treaty in the St. Joseph Division of the western district of Missouri, a masterly summary of the arguments which convinced a confessedly antagonistic judge of the validity of the law.

'Bird Notes and News'³ and the annual report of the Royal Society for the protection of Birds are full of details of bird protection in England after the war.

'The Audubon Bulletin,'⁴ winter 1918-1919 issue, is as usual one of the most attractive publications of its kind, well printed and well illustrated. The need of forest and game protection in southern Illinois is discussed by Robert Ridgway and shows both in text and illustrations his well known love of trees as well as birds. Other articles deal with the scenic beauty of the Mississippi, Theodore Roosevelt as a conservationist, the bird protective laws of Illinois, etc.

'The Alabama Bird-Day Book'⁵ abounds in good bird poems and interesting sketches suitable for school use compiled from various sources, while several of the Mumford colored plates of birds serve as illustrations. Few, if any, other States have publications so well suited to the purpose as this.

The West Chester Bird Club of Pennsylvania, organized some years ago for local bird study under the leadership of Dr. C. E. Ehinger, has issued an attractive little pamphlet⁶ giving an account of its activities, with some very creditable original bird poems.

¹ Game Laws for 1919. By Geo. A. Lawyer and Frank L. Earnshaw. Farmers' Bulletin 1077, U. S. Department of Agriculture. August, 1919. pp. 1-80.

² Federal Protection of Migratory Birds. By George A. Lawyer. Separate from the Yearbook of the Department of Agriculture. No. 785, pp. 1-16.

³ Bird Notes and News. Issued quarterly by the Royal Society for the Protection of Birds, 23 Queen Anne's Gate, London, S. W. 1., England.

⁴ The Audubon Bulletin. Published by The Illinois Audubon Society, 1649 Otis Building, Chicago.

⁵ Alabama Bird Day Book, 1919. Issued by the Department of Game and Fish, John H. Wallace, Commissioner. pp. 1-103.

⁶ West Chester Bird Club, Historical Sketch, Summary of Year's Work, 1918-1919, July 1, 1919. pp. 1-20.

'California Fish and Game'¹ for April contains an article of the insectivorous habits of the Herring Gull, by A. C. Burrill, a convincing argument in favor of the bird, while in 'Fins, Feathers and Fur,'² Thaddeus Surber has an interesting paper on the Pine Co. Minnesota Game Refuge as a playground, and there is a remarkable photograph of Mallards at Crane Lake, Illinois. Taking the opposite view from that expressed in the 'Audubon Bulletin' this journal unhesitatingly condemns the Crow and endorses the national crow shoot.—W. S.

Report of the National Zoological Park.³—The second annual report of superintendent Ned Hollister shows a slight increase in the collections, notwithstanding the restrictions of war times. The birds include 190 species, represented by 706 individuals in comparison with 182 species and 683 individuals in 1917. Among the more notable acquisitions of the year were six Keas (*Nestor notabilis*) and eight Wekas or flightless Rails (*Ocydromus*) from South Island, New Zealand; a pair of Straw-necked Ibis (*Carphibis spinicollis*) from Australia; a pair of Thick-billed Parrots (*Rhynchopsitta pachyrhyncha*) from the Chiricahua Mountains, Arizona; and a Santo Domingo Parrot (*Amazona ventralis*). Forty-five birds were hatched during the year, including several American Coots. This is apparently the first record of the breeding of this species in captivity, at least in this country. Waterfowl (Anseriformes) constitute the largest group in the collection. Of the 40 species represented, two-thirds are North American. These birds are kept in an enclosure provided with a large pond, where they can be readily seen, and thus form one of the most attractive exhibits in the Park. A noteworthy feature of the report is the complete list of mammals, birds, and reptiles by species and individuals and the care exercised in the use of correct scientific names.—T. S. P.

Annual Report of the New York Zoological Society.⁴—The report for 1918 shows commendable progress in the various activities of the New York Zoological Society in spite of adverse conditions due to the war. Two sections of this report contain notes of ornithological interest. The Department of Birds, in charge of Lee S. Crandall, Curator, and William Beebe, Honorary Curator, has maintained its collections "somewhat reduced in numbers but still rich in rare and unusual forms." Only 16 species new to the collection were added during the year. Of these, the most important

¹ California Fish and Game. Published quarterly by the California Fish and Game Commission, Sacramento, Calif.

² Fins, Feathers and Fur, Official Bulletin of the Minnesota Game and Fish Department, Carlos Avery, Commissioner, St. Paul, Minn.

³ Report of the Superintendent of the National Zoological Park for the Fiscal Year ending June 30, 1918. Reprint from Ann. Rept. Smithsonian Institution for 1918, pp. 66-81, Washington, Govt. Printing Office, 1919.

⁴ Twenty-Third Annual Report of the New York Zoological Society, 1918, 8vo, pp. 156, 1919 (Dept. of Birds, pp. 67-70, Tropical Research Station, pp. 84-86). Office of the Society, 111 Broadway, New York.

were a male Argus Pheasant (*Argusianus argus*), an adult male Regent Bird (*Sericulus chrysocephalus*), a Green-backed Trumpeter (*Psophia viridis*), a Double-banded Puff-bird (*Bucco bicinctus*) "probably never before exhibited alive," and a chick of the Galeated Curassow (*Pauxi pauxi*). Among the birds bred in the Park during the year were three Upland Geese (*Chloephaga magellanica*) and a Banded Curassow (*Craz sclateri*)—both apparently first records of the breeding of these species in the United States. The census of birds on January 1, 1919, showed 736 species represented by 2,406 individuals as compared with 813 species and 2,799 individuals the previous year. The number of species in some of the larger groups in the collection were as follows: Galliformes, 68; Columbigiformes, 61; Anseriformes, 54; Psittaciformes, 66, and Passeriformes, 332.

The Tropical Research Station in the Bartica District of British Guiana was compelled to suspend field work, but the Director, William Beebe, and the Preparator, John Tee Van, "spent all the time available in a careful review of past collections and of zoological literature for records of the higher vertebrates of British Guiana, resulting in a preliminary check list" which will be published in the near future. The number of species of birds credited to the Bartica District is 426. An expedition in charge of Director Beebe sailed in February, 1919, to reopen the station on a new and permanent site at Katabo, at the junction of the Mazaruni and Cuyuni Rivers.—T. S. P.

The Meaning of Natural Control.—In a paper¹ with this title Mr. John D. Tothill calls attention to the obvious fact that in each generation of any animal, all but two individuals from the total progeny of each pair must perish. This mortality is due chiefly to natural control, and in explaining how the natural control of certain insects is accomplished the author makes certain interesting references to birds.

Among predatory enemies of insects the chief are birds and insects. In the case of the Forest Tent-caterpillar the percentage of destruction due to various enemies is estimated, and chickadees and mites together are credited with the destruction of 25 % of the eggs. Doubtless the major share of these fall to the chickadees. As further examples of the work of birds, the author states that the Cecropia moth in New Brunswick is held in check chiefly by the Downy and Hairy Woodpeckers, and that the Red-eyed Vireo is one of the chief factors in the control of the Fall Webworm.

In the tabulation of the enemies of the latter insect, birds are credited with a percentage of destruction of the broods, varying in different years, from 11.4 % to 89.5 %. In 1912, when the insect was fairly plentiful, a reduction in numbers was brought about chiefly by parasites (insects). In succeeding years the parasites gradually died out as the insect became rare, and control was maintained almost exclusively by birds.—W. L. M.

¹ Proc. Ent. Soc., Nova Scotia, 1918, pp. 10-14.

An Essay on Crows.—In a paper¹ devoted chiefly to the Australian Corvidæ, W. W. Froggatt gives interesting historic lore, and notes on the habits of crows and ravens of all parts of the world. The American Crow is treated under the name *Corvus corone*.

The Australian Crows, like their relatives the world over, are severely criticised for certain injurious traits, and Mr. Froggatt is in sympathy with efforts to control their numbers when necessary. On the other hand, he points out their valuable habits in the way of feeding on insects and in cleaning up carrion. He asserts that they are the best scavenger birds in Australia, and that it is preferable to maintain them in numbers than to introduce carrion-feeder birds from other countries, a movement that has actually been taken up by the Australian Government. In a land where the introduction of exotic species has proved so disastrous as it has in Australia, it would seem that further experiments along this line would be avoided.—W. L. M.

Two Papers on African Economic Ornithology.—Captain S. S. Flower and Mr. M. J. Nicoll are the authors of a profusely and well illustrated brochure² intended to acquaint the people of Egypt with 25 of the more important birds protected by law. The authors state that previous efforts along educational lines have borne fruit. Protected birds are still sold for food in Cairo, however, being picked to hide their identity. Better knowledge of the birds on the part of officials, one of the objects of the bulletin reviewed, is expected to help end this traffic. The authors remark that: "Egypt is a country specially adapted to ravages by insect-pests, because natural enemies of these insects (*e. i.*, birds) are scarce. It is recognized as an axiom that no artificial system of insect destruction is comparable in effect with that which nature herself imposes by means of natural enemies, and it therefore becomes essential that every possible effort to preserve insectivorous birds should be carried out by the cultivators, as well as being supported by all who have an interest in the welfare of agriculture in the country."

In an account of 'Some Insects Injurious to the Black Wattle (*Acacia mollissima* Wild.),' a tanbark plant, C. B. Hardenberg notes³ that birds have both an injurious and a beneficial relation with respect to the chief insect enemy of the plant, the bagworm. Circumstantial evidence indicates that birds serve to distribute the pest, but the bird-carried bagworms usually are insignificant compared to the general infestation due to other agencies. Four kinds of birds have been observed feeding on the bagworm in various stages, thus contributing toward the natural control of this well-protected insect.—W. L. M.

¹ The Crow Family. The Australian Zoologist, Vol. 1, Pt. 6, Nov. 11, 1918, pp. 189-195.

² The Principal Species of Birds Protected by Law in Egypt. Ministry Agr., Cairo, 1918, pp. iv + 8, 8 Col. Pls.

³ Bul. 1, 1918, Dept. Agr., Union, S. Africa, 1919, pp. 25, 34-35.

Report on the Economic Value of Eight British Birds.— In a recent report¹ Professor Walter E. Collinge further shows his reliance on the volumetric method of analyzing the contents of birds' stomachs, and throws a clearer light on the economic relations of eight species of British birds. The Jackdaw although having a bad name like most of the Crow family, is found, on the whole, considerably more beneficial than injurious. Only occasionally is combating it warranted. The Starling has increased enormously in England during the past 15 years and consequently has been forced to change its feeding habits. Repressive measures calculated to bring the bird back to its normal abundance are needed; then it is practically certain the species could again be classed as useful. The Chaffinch is not of decided economic importance, one way or the other. It destroys some fruit buds and grain, which it seems to pay for by an equivalent consumption of injurious insects. Vigorous methods either for or against the bird are not indicated. The Yellow Bunting, like the Chaffinch, has an almost neutral economic significance. The Great Tit and the Blue Tit are shown to be heavy consumers of injurious insects. Both species differ from the American Titmice in doing some damage to fruit, but the conclusion as to their general economic tendencies is, as would be expected, distinctly favorable. Two thrushes are reported upon, of which the Song Thrush is shown to damage fruit, at times, but to compensate for it by insect destruction, and the Fieldfare is shown to be almost exclusively beneficial.— W. L. M.

The Ornithological Journals.

Bird-Lore. XXI, No. 3. May-June, 1919.

The Warblers of Central New York. By Arthur A. Allen (concluded).

Notes from A Traveller in the Tropics. IV. Peru. By Frank M. Chapman.— An interesting account of familiar species with figures of the White-throated Song Sparrow (*Brachospiza capensis*) and the Flightless Grebe of Lake Titicaca (*Centropelma micropterum*).

Purple Finches. By Mrs. H. F. Straw.— Interesting notes on habits.

Two Thrushes. By T. A. Taper.— Olive-back and Hermit with observations on nesting.

The migration and plumage notes refer to the Blue, Green and Steller's Jays, with plate by Fuertes, while the Audubon leaflet treats of the Least Bittern, the plate being by Horsfall.

Bird-Lore. XXI, No. 4. July-August, 1919.

Nature and England. By Frank M. Chapman.— An impressive pen picture of England in spring time and her people recovering from the strain of war.

¹ Some Further Investigations on the Food of Wild Birds. Journ. Board Agr. [London], 25, No. 12, March, 1919, pp. 1444-1462, 9 figs. (diagrams).

A Pocket Sanctuary. By F. Randle.— Treats of familiar Oregon birds.
The Night Warbler. By H. E. Tuttle.— A remarkably fine photograph
of the Ovenbird on its nest, with appropriate text.

The Condor. XXI, No. 3. May-June, 1919.

Some Notes on the Egg of *Aepyornis maximus*. By Wm. C. Bradbury.
With photographs.

Autobiographical Notes. By Henry Wetherbee Henshaw. With por-
trait.— A delightful article to be continued in succeeding numbers. It
abounds in interesting historical and biographical information.

A Return to the Dakota Lake Region. By Florence M. Bailey. VI.
The Coulee of the Meadows.

Malcolm Playfair Anderson. By M. B. Anderson.

Description of an Interesting Junco from Lower California. By Harry
C. Oberholser.— *Junco oreganus pontilis* (p. 119) from the Hanson Laguna
Mountains.

The Condor. XXI, No. 4. July-August, 1919.

A Favorite Nesting Haunt of the Merrill Song Sparrow. By Henry J.
Rust.— With excellent photographic illustrations.

Nesting of the Northern Pileated Woodpecker. By H. W. Carriger and
Gurnie Wells.

A Return to the Dakota Lake Region. By Florence M. Bailey.— VII.
The Gem of the Sweetwaters in Cove and Shore.

A Short Paper on the Hutton Vireo. By Clark C. Van Fleet.

The Wilson Bulletin. XXXI, No. 1. March, 1919.

The Food Habits of the Smith Sound Eskimos. By W. E. Ekblaw.
Migration Records for Kansas Birds. By Bessie P. Douthitt. (Continued
in June.)

Description of a New Red-winged Blackbird from Texas. By Harry C.
Oberholser.— *Agelaius phaniceus megapotamus* (p. 20). Rio Grande
Valley, type from Brownsville.

The Wilson Bulletin. XXXI, No. 2, June, 1919.

The Snow Bunting, an Arctic Study in Black and White. By W. E.
Ekblaw.

The Bald Eagle in Louisiana. By A. M. Bailey.

The Gray Kingbird in Wakulla County, Florida. By John Williams.

A Day with Lake County Birds. By F. N. Shankland.

The Oölogist. XXXV, No. 4. April, 1919.

Nesting of the American Hawk Owl. By A. S. Henderson.

Cowbird Study in Iowa. By E. A. Stoner.— Gives data for a number
of nests containing Cowbird eggs.

The Ibis. XI Series, Vol. I, No. 3. July, 1919.

A Preliminary Study of the Relation between Geographical Distribution
and Migration with Special Reference to the Palæarctic Region. By R.
Meinertzhagen.— This is a plea for the importance of the recognition of
subspecies as an aid to the study of migration. All through his discussion,
however, the author seems to have but one phase of migration in mind,

i. e. migration routes. With his statements in this connection we heartily agree.

On Birds from South Annam and Cochin China. Part I. Phasianidae — Campophagidae. By H. C. Robinson and C. Boden Kloss.— This is the first instalment of a fully annotated list of birds collected by Kloss during a couple of months early in 1918. In all 1525 specimens were obtained, representing 235 species and subspecies of which 34 are described as new. The itinerary, which is interesting reading, is prepared by Kloss and the annotated list by the two authors together. The present installment covers 62 pages and we notice the following new forms: *Arboricola rufogularis annamensis* (p. 403), Langbian Peaks; *A. brunneipectus albigula* (p. 405), Dran; *Pyrotrogon erythrocephalus annamensis* (p. 424), Dran; *Cyanops oorti annamensis* (p. 428), Dalat; *C. franklini auricularis* (p. 428), Langbian Peaks; *Niltava grandis decorata* (p. 444); *Dendrobiastes hyperythra annamensis* (p. 445); *Cryptolopha castaneiceps annamensis* (p. 447); *C. malcolm-smithi* (p. 448); *C. tephrocephala ocularis* (p. 448); all the latter from the Langbian Peaks. There are colored plates of the two Tree Partridges and a number of views of the country. The authors decide that the great majority of those species which are not typically Indo-Chinese are distinctly Himalayan, with some Malayan forms which here reach the limit of their range. Typical Chinese species were unexpectedly few.

On the Plumage-development of *Nettion torquatum*, *Pacilonetta erythrorhyncha* and *Anas undulata*. By F. E. Blaauw.— Descriptions of various plumages.

List of the Birds of the Canary Islands. Part III. Picidae — Sulidae. By David A. Bannerman.— Another installment of this almost monographic account.

Further Ornithological Notes from the Neighborhood of Cape San Antonio, Province of Buenos Ayres. Part II. Trochilidae — Plataleidae. By Ernest Gibson.— An entertaining account of Argentine bird life.

Bulletin of the British Ornithologists' Club. No. CCXLII. April 30, 1919.

The following new forms are described: By W. L. Slater, *Leucopternis ghiesbreghtii costaricensis* (p. 76), Carillo, Costa Rica; by E. Stuart Baker, *Rhinorhiza chlorophæa fuscigularis* (p. 77), Sarawak, Borneo; and *Poliopsis leucocephalus annamensis* (p. 77), Nhatrang; by Chas. Chubb, *Synallaxis macconnelli* (p. 78), Mt. Roraima, British Guiana.

Bulletin of the British Ornithologists' Club. CCXLIII. June 4, 1919.

Lord Rothschild having obtained some specimens of Ostriches from the Syrian desert finds them distinctly smaller than the North African form, a fact that had already been suggested by the smaller size of the eggs, he therefore describes it as *Struthio camelus syriacus* (p. 83), wisely restricting *camelus* to the African bird.

Dr. Hartert describes *Melanocorypha bimaculata gaza* (p. 84), Shellal, Palestine, and *Corvus cornix judæus* (p. 85), Bir Salem, Palestine. He also

discusses the nomenclature of the Guinea-fowls, and although he says that were we starting afresh the specific name *meleagris* Linn. would have to be applied to the species now known as *ptilorhyncha*, it is undoubtedly based upon a mixture of this and the West African form to which it is usually applied. Like Lord Rothschild he prefers not to upset current nomenclature although he does not apparently definitely fix the application of Linnaeus' name. In order to complete the work we would therefore, definitely, restrict *Phasianus meleagris* to the West African Guinea-fowl usually called by that name or by Pallas' name *Numida galeata*. The attitude of Lord Rothschild and Dr. Hartert is most praiseworthy and we should like to see it adopted by certain authors who rush into changes that might easily be avoided without violating the rules of any Code.

W. L. Sclater describes *Spizaetes batesi* (p. 87), Bitye, Cameroons and Chas. Chubb proposes *Lophotriccus macconnelli* (p. 90), Ituribisi, British Guiana.

Bulletin of the British Ornithologists' Club. No. CCXLIV. June 30, 1919.

Chlorophoneus andaryæ (p. 94), is described by Sir. F. Jackson from Uganda. Chas. Chubb proposes a new genus *Microcochlearius* (p. 98) for *Euscarthmus josephineæ* Chubb.

D. A. Bannerman proposes *Crateropus tenebrosus claudei* (p. 99) from Poko, Belgian Congo.

British Birds. XII, No. 11. April, 1919.

Ornithological Notes from Norfolk for 1918. 25th Annual Report. By J. H. Gurney.

British Birds. XII, No. 12. May, 1919.

Birds of the Battlefields. By Capt. Arthur deC. Sowerby.

Bird Notes from the Western Front. (Pas-de-Calais). By Capt. W. S. Medlicott.

British Birds. XIII, No. 1. June, 1919.

Additions and Corrections to the Hand-List of British Birds. By the Authors.—Several of these affect species in the A. O. U. List. The American Goshawk is added under the name *Accipiter gentilis atricapillus*, the bird being regarded as a subspecies of the European while the genus *Astur* is not recognized. The generic names *Machetes* and *Calidris* are rejected in favor of *Philomachus* and *Crocethia*, they having been used in other connections by an anonymous author of earlier date, as pointed out by Dr. C. W. Richmond. Mr. Ridgway in the last volume of his 'Birds of North and Middle America,' it will be noticed refuses to recognize this anonymous author, but according to our Code Dr. Richmond and the authors of the British 'List' must be followed. The name of the Glaucous Gull is changed to *Larus hyperboreus* following the A. O. U. 'Check-List.'

The Bittern in the Norfolk Broads. By Emma L. Turner.—This bird has been regarded as a "lost breeding species" in England, having been driven out by persistent persecution. During the war, however, it has reestablished itself and the hope of the author is that it may be allowed to

persist. "The war" she writes "has been a godsend to the birds of Great Britain, because it has kept the majority of gunners and collectors busy elsewhere." Nevertheless in Norfolk evidence has been collected of the killing of fifteen Bitterns during the past year.

The Ruff.—An Early Record. By W. H. Mullens.—An account of a rare and curious black letter tract describing the occurrence of the Ruff in England in 1586.

British Birds. XIII, No. 2. July, 1919.

The Pied and White Wagtails. By H. F. Witherby.—Descriptions and figures of the various plumages of these two allied races.

Note on the Drumming of Woodpeckers. By J. S. Huxley.—The dead hollow stub upon which a Woodpecker had been seen drumming on many occasions was cut off and showed no marks of the bill whatever. Prof. Huxley points out that it is the rapidity of the strokes not their force that produces the resonant sound and cites the action of a Red-headed Woodpecker in the United States drumming on a tin post covering where the best result in sound could be secured. The reviewer has noticed the same species persistently drumming on a lightning rod.

The Birds of Bardsey Island (Wales). By N. F. Ticehurst. (Continued in the August number.)

British Birds. XIII, No. 3. August, 1919.

Down Tracts of Nestling Birds. By Collingwood Ingram.—Discussion of the nomenclature of feather tracts of the head.

Avicultural Magazine. X, No. 6. April, 1919.

The Pigeons of the Gambia. By E. Hopkinson. (Continued.)

Avicultural Magazine. X, No. 7. May, 1919.

The History of Birds' Nests. By A. G. Butler.—A speculative discussion.

The Necessity of State Action for the Protection of Wild Birds. By W. E. Collinge.

A Curious Habit of the Moorhen. By E. G. B. Meade-Waldo.—One young fed by another.

Avicultural Magazine. X, No. 8. June, 1919.

The Wattle of Cabot's Tragopan. By H. D. Astley.—A criticism of the plate in Beebe's 'Pheasants.'

Avicultural Magazine. X, No. 10. August, 1919.

Bird Life in South Africa. By F. W. H. Seppings.

Bird Life about Moree, N. S. W. The Home of the White-winged Blue Wren. By an old Australian Bird Lover.

The Emu. XVIII, Part 4. April, 1919.

A New Pigeon for Australia. The Red-cered Pigeon (*Globicera rubricera*). By J. A. Kershaw.

Notes on Birds Breeding in Dampier Archipelago, N. W. Coast of Australia. By F. L. Whitlock.

Further Notes on Additions to the "H. L. White Collection." By A. J. Campbell. (Continued.)

Down Marlo Way. By Dr. Brooks Nichols and others.

The Birds of the Pilliga Scrub, New South Wales. By J. B. Cleland.

Six Months' Record of a Pair of Mallee-Fowls. By J. A. Ross.—A valuable record.

Report on Investigations in Regard to the Spread of Prickly Pear by the Scrub Turkey. By G. B. Brookes.—The results of the investigation showed that the bird was not an active agent in spreading the plant.

The Emu. XIX, Part I. July, 1919.

Notes on Birds Observed in the Upper Clarence River District, N. S. W., Sept.-Dec., 1918. By J. Ramsey.

Material for a Study of the Megapodidæ. By R. W. Shufeldt.—A review of the literature and a list of specimens in the U. S. National Museum arranged according to Ogilvie-Grant (British Museum Catalogue, Vol. XXII). Numerous illustrations from photographs of skins and mounted specimens.

The Black-throated Honey-eater (*Melithreptus gularis*). By P. A. Gilbert.

Bird Notes from Mackay, Queensland. By W. G. and R. C. Harvey.—With remarkably fine illustrations from photographs of wild birds.

An Ornithologist with the A. I. F. in Egypt and Palestine. By F. L. Berney.

A Dipterous Parasite on Nestling Birds. By P. A. Gilbert.

The Changes in Colour of the Bill of the Black Moor-Hen. By W. B. Alexander.

Revue Francaise d'Ornithologie. XI, No. 119. March 7, 1919. [In French.]

Notes on the Common Cormorant of Sfax. By P. Bede.

Revue Francaise d'Ornithologie. XI, No. 120. April 7, 1919.

On the Mechanical Balance between the Comparative Length of the Wing and Tarsi in Birds. By M. Boubier.

Critical Notes on the Hummingbirds. By M. E. Simon.—Fifteen new genera are proposed.

Revue Francaise d'Ornithologie. XI, No. 121. May 7, 1919.

Inquiry into the Disappearance of the Sparrow in the South. By A. Menegaux.

L'Ornithologiste (Organ of the Swiss Society for the Study and Protection of Birds.) [In German.] XVI, Nos. 1-10, October, 1918-July, 1919.

Contains articles on local bird life with an Analysis of the Song of the Creeper. By H. Stadler and C. Schmitt, in No. 4.

El Hornero. I, No. 3. December, 1918. [In Spanish.]

The Lariformes of the Republic of Argentina. By R. Dabbene.—Reviews the Terns.

Biological Notes on the Birds of North-eastern Argentina. By Luis Dinelli. (Continued.)

List of the Birds of Mendocina. By Renato Sanzin.

The Fantastic Ornithology of the Conquistadors. By A. Cardoso. (Continued.) — With illustrations from old works.

Notes on a Collection of Birds from the Island of Martin Garcia. By R. Dabbene. (Continued).

Description of Two Forms of Birds Apparently New from N. W. Argentina. By R. Dabbene. *Penelope nigrifrons* (p. 178), Cerro de Calilegua, Jujuy and *Spinus ictericus magnirostris* (p. 181), Sierra del Cajon, Salta.

Ardea. VII, No. 4, 1918. [In Dutch.]

Ornithological Observations in Holland. By E. D. Van Oort. — Includes records of a number of hybrid ducks. *A. boschas* with *Dafila acuta*, *Mareca penelope* and *Chaulelasmus streperus* and *Dafila acuta* with *Mareca penelope*.

Reports from the Ornithological Experiment Station at Heuman. By Jan J. Luden van Heumen. — Elaborate report on the food of the Pheasant (*Phasianus colchicus*) with stomach and crop contents of 96 individuals.

Tori [Birds]. II, No. 7. 1918.

Through the courtesy of our Corresponding Fellow in Tokyo, Mr. Nagamichi Kuroda, we are able to present translations of the titles of the principal articles in the last number of "Tori" for 1918 published in Japanese by the Ornithological Society of Japan.

1. An Annotated List of the Birds of Quelpart Island. By Nagamichi Kuroda and Tamezo Mori.

2. Observations on Young Birds of *Ninox scutulata*. By M. Kawaguchi.

3. Occurrence of *Chatharacta antarctica* and *Syrhaptes paradoxus* in Japan. By Nagamichi Kuroda.

4. A Collection of Birds from the Loo Choo Islands and Amamioshima. By E. Horii.

5. A List of Birds collected on the west coast of Kamchatka. By T. Momiyama.

The number also contains a portrait of the late M. Namiye.

Tori [Birds] (Bulletin of the Ornithological Society of Japan). II. No. 8, 1919. [In Japanese. Beginning with this number the table of contents is also printed in English].

Frontispiece. A flock of Water-fowls on the outer Moat of the Imperial Palace.

On some specimens of birds from Saghalin in the Sapporo Museum. By T. Momiyama.

On the migration of some common species of birds in the vicinity of Seoul, Corea. By N. Kuroda and J. Mikayoda.

On the habits and sexual differences of the Himalayan Cuckoo. By M. Kawaguchi.

Migration and habits of swallows in Shikoku. By Y. Enomoto.

Notes on some birds from Iruma-gun, Prefect, Saitama. By T. Momiyama and M. Nomura.

History of the Audubon Movement. Translated by S. Uchida.

Ornithological Articles in Other Journals.

Brigham, Edward M. The Hoactzin — Only Survivor of an Ancient Order of Four-footed Birds. (Natural History, XIX, February, 1919.) — An account of the discovery of the quadrupedal nature of the young by the discoverer.

Evans, William. The Great Crested Grebe in Forth. (The Scottish Naturalist March-April, 1919.)

Evans, William. Woodcock and the Safety of their Young. (*Ibid.*)

Baxter, Evelyn V. and Rintoul, L. J. On the Great Crested Grebe as a Scottish Breeding Species. (*Ibid.*, May-June, 1919.)

Rintoul, Leonora J. and Baxter, Evelyn V. Report on Scottish Ornithology in 1918. (*Ibid.* July-August, 1919.)

O'Donoghue, C. H. and Gowanlock, J. Nelson. Notes on the Caspian Tern (*Sterna caspia*) and the Parasitic Jaeger (*Stercorarius parasiticus*) in Manitoba. (Canadian Field-Naturalist, April, 1919.) — A number of other species are also listed.

Taverner, P. A. The Birds of Shoal Lake. Manitoba. (*Ibid.*) — Continued from The Ottawa Naturalist, XX XII, p. 164.

Farley, F. L. The White Pelican, *Pelecanus erythrorhynchos*, in Alberta. (*Ibid.*, May, 1919.)

Hornaday, W. T. Beebe's Great Pheasant Monograph. (N. Y. Zoological Society Bulletin. January, 1919.)

Hornaday, W. T. Bird Notes from South America. The Truth about Gathering Egret Plumes in Venezuela, Slaughter of the Condors, and Insect Pests Follow Bird Slaughter. (*Ibid.*) — Extracts from Leo E. Miller's 'In the Wilds of South America.'

Crandall, Lee S. Rare Birds in the Zoological Park. (*Ibid.*) — Emus, Upland Geese, etc.

Shufeldt, R. W. The Osteology of the Giant Gallinule of the Philippines, *Porphyrio pulverulentus* Temminck. With notes on the Osteology of *Tachybaptus philippensis* (Bonnaterre) and *Hydrophasianus chirurgus* (Scopoli). (Philipp. Jour. of Sci., January, 1919.)

Culin, S[tewart]. Japanese Color Prints Illustrating Samuel Smiles' Self Help. (Brooklyn Museum Quarterly, April, 1919.) — This work was translated into Japanese in 1878 under the title 'The Western Countries' Book of Successful Careers.' Audubon's was one of these and the illustration which accompanied the sketch is reproduced here. It represents the ornithologist on his knees opening the box in which were his drawings that had been destroyed by rats. It adds one more to the list of portraits given by Prof. Herrick.

Nichols, J. T. Notes and Habits of Shore Birds. (Bulletin of the American Game Protective Association, April, 1919.) — An excellent account of some of the commoner species.

Cole, L. J. and Lippincott, W. A. The Relation of Plumage to Ovarian

Condition in a Barred Plymouth Rock Pullet. (Biological Bulletin, March, 1919). — A pullet with ovarian tumor developed male plumage but reverted to female upon the implantation of ovarian tissue. The barring in Plymouth Rock poultry differs in the two sexes and in this instance the 'male' plumage while male in shape and structure resembled the female in barring.

Publications Received.—**Adams**, Charles C. The Roosevelt Wild Life Forest Experiment Station. (Science, XLXI, June 6, 1919.)

Bangs, Outram, and **Penard**, Thomas E. Some Critical Notes on Birds. (Bull. Mus. Comp. Zool., LXIII, No. 2.)

Bangs, Outram. A New Striated Grass Warbler from the Philippines. (Proc. N. E. Zool. Club, June 6, 1919.)

Bent, Arthur Cleveland. Life Histories of North American Birds, Order Pygopodes. (Bull. 107, U. S. Nat. Mus., 1919.)

Childs, John Lewis. First Supplement to a Catalogue of the Natural History Books in the Library of John Lewis Childs. July 1, 1919.

Chubb, Charles. Notes on collections of Birds in the British Museum, from Ecuador, Peru, Bolivia, and Argentina. Part II. Podicipediformes—Accipitriformes. (Ibis, April, 1919.)

Cole, Leon J., and **Kelley**. Studies on Inheritance in Pigeons. III. Description and Linkage Relations of Two Sex-Linked Characters. (Genetics, March, 1919.)

Cole, Leon J., and **Lippincott**, William A. The Relation of Plumage to Ovarian Condition in a Barred Plymouth Rock Pullet. (Biological Bulletin, March, 1919.)

French, John C. The Passenger Pigeon in Pennsylvania. Altoona, Pa., 1919. Price \$4.00. Franklin Book Shop, 920 Walnut St., Philadelphia.

Gladstone, Hugh S. Birds and the War. Skeffington & Son, Ltd., 34 Southampton St., Strand, W. C. 2, London. 1919. Price 5s. net.

Lawyer, George A., and **Earnshaw**, Frank L. Game Laws for 1919. Farmers' Bulletin 1077, U. S. Dept. of Agriculture, August, 1919.

Lawyer, George A. Federal Protection of Migratory Birds. (Yearbook of the U. S. Dept. of Agriculture, 1918.)

Lonnberg, Einar. (1) Hybrid Gulls (Arkiv. Zool. Svensk. Vetensk. Acad., Band 12, No. 7, 1919). (2) Birds Collected in Eastern Cogo by Capt. Elias Arrhenius. (*Ibid.*, Band 10, No. 24.) (3) Notes on Some Interesting East African Birds. (*Ibid.*, Band 11, No. 5, 1919.)

Mathews, Gregory M. The Birds of Australia. Vol. VII, Part V, July 10, 1919.

Oberholser, Harry C. The Birds of the Tambelan Islands, South China Sea. (Proc. U. S. Nat. Mus., Vol. 55, pp. 129-143.) (2) Notes on the Wrens of the Genus *Nannus* Billberg. (*Ibid.*, pp. 223-236.) (3) Notes on Birds Collected by Dr. W. L. Abbott on Pulo Taya, Berhala Strait, Southeastern Sumatra. (*Ibid.*, pp. 267-274.) (4) A Revision of the Subspecies of the White-collared Kingfisher, *Sauroptatis chloris* (Boddaert).

(*Ibid.*, pp. 351-395.) (5) The Races of the Nicobar Megapode, *Megapodius nicobariensis* Blyth. (*Ibid.*, pp. 399-402.) (6) Notes on Dr. W. L. Abbott's Second Collection of Birds from Simalur, Western Sumatra. (*Ibid.*, pp. 473-498.)

Pemberton, J. R. Second Ten Year Index to The Condor. Vols. XI-XX, 1909-1919. Cooper Ornithological Club, Pacific Avifauna No. 13, August 15, 1919, pp. 1-92. Price \$3.00.

Ridgway, Robert. The Birds of North and Middle America. Part VIII., pp. 1-852. (Bull. 50, U.S. Nat. Mus.)

Riley, J. H. Six New Birds from Celebes and Java. (Proc. Biol. Soc., Washington, May 20, 1919.)

Roberts, Thomas S., M. D. (1) Water Birds of Minnesota; Past and Present. (Biennial Rept. State Game and Fish Comm., Minnesota.) (2) A Review of the Ornithology of Minnesota. (Research Publications of the Univ. of Minn., Current Problems No. 11, May, 1919.)

Sclater, W. L. A Note on the Buzzards of the Ethiopian Region. (*Ibis*, April, 1919.)

Shufeldt, R. W. The Osteology of the Giant Gallinule of the Philippines, *Porphyrio pulverulentus* Temmink. (Philipp. Jour. of Science, Vol. XIV, No. 1, January, 1919.)

Townsend, Charles Haskins, and Wetmore, Alexander. Reports on the Scientific Results of the Expedition to the Tropical Pacific in Charge of Alexander Agassiz, on the U. S. Fish Commission Steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson F. Moser, U. S. N., commanding. The Birds. (Bull. Mus. Comp. Zool., LXIII, No. 4, August, 1919.)

Wallace, John H. Alabama Bird Day Book, pp. 1-103.

West Chester Bird Club Report of 1919.

Wetmore, Alexander. Lead Poisoning in Waterfowl. (Bull. No. 793, U. S. Dept. of Agr., July, 1919.)

White, Capt. S. A. (1) Ooldea on the East West Railway; on the Flooded Murray River and Other Sketches. (2) The Gawler Ranges, an Ornithological Expedition. 1913 (reprinted from newspapers in small quarto.)

Wilson, Francis M. Brief of the U. S. versus Violators of the Migratory Bird Treaty, District Court of the U. S. for the St. Joseph Division of the Western District of Missouri.

Witherby, H. F. A Practical Handbook of British Birds. Part 2, April 30, 1919. Part 3, June 18, 1919.

Austral Avian Record, The, III, No. 5 (December 28, 1917).

Avicultural Magazine, The, (3) X, Nos. 7, 8, 9, 10, May to August, 1919.

Bird-Lore, XXI, Nos. 3 and 4, May-June and July-August, 1919.

Bird Notes and News, VIII, Nos. 5 and 6, spring and summer, 1919.

British Birds, XII, Nos. 12 and XIII, Nos. 1, 2 and 3, May to August, 1919.

Brooklyn Museum Quarterly, The, April, 1919.

Bulletin of the American Game Protective Association, Vol. VIII, Nos. 2 and 3, April and July, 1919.

Bulletin of the British Ornithologists' Club, CCXLII, CCXLIII and CCXLIV, April 30, June 4 and 30, 1919.

Bulletin of the Charleston Museum, XV, No. 5, April, 1919.

Bluebird, XI, Nos. 5, 6, 7, 8 and 9, April-August, 1919.

California Fish and Game, Vol. 5, Nos. 2 and 3, April and July, 1919.

Cassinia, XXII, for 1918. (April, 1919.)

Canadian Field Naturalist, The, XXXIII, Nos. 1 and 2, April and May, 1919.

Condor, The, XXI, Nos. 3 and 4, May-June and July-August, 1919.

Hornero, El, I, No. 3, December, 1918.

Emu, XVIII, Part 4, April, 1919, and XIX, Part I, July, 1919.

Fins, Feathers and Fur. Nos. 17 and 18, March and June, 1919.

Ibis, The (II), I, No. 3, July, 1919.

L'Ornithologiste, XVI, Nos. 8-9 and 10, May-June and July, 1919.

Natural History, XIX, Nos. 2 and 3, February and March, 1919.

Oologist, The, XXXV, Nos. 5, 6, 7 and 8, May-August, 1919.

Philippine Journal of Science, XIV, No. 1, January, 1919.

Proceedings of the Academy of Natural Sciences of Philadelphia, LXXI, Part I, January-March, 1919.

Revue Française d'Ornithologie, Nos. 120, 121, 122, April, May and June, 1919.

Scottish Naturalist, The, 87-88, 89-90, and 91-92, March to August, 1919.

South Australian Ornithologist, The, IV, Part 2, April, 1919.

Wilson Bulletin, The, XXXI, No. 2, June, 1919.

CORRESPONDENCE.

Permits to Collect Birds for Scientific Purposes in Canada.

EDITOR OF 'THE AUK':

Considerable confusion and delay has arisen because ornithologists wishing to collect birds or their nests or eggs in the Dominion of Canada have not been familiar with the law.

Application for permission to take migratory insectivorous, migratory game, or migratory non-game birds, as defined in the Migratory Birds Convention, in Canada, should be made to J. B. Harkin, Commissioner of Dominion Parks, Department of the Interior, Ottawa. As other kinds of permits are issued by this department, be sure to state explicitly that you wish to collect the migratory birds protected by federal law. Permits will be issued as promptly as possible, but the collector should allow two or three weeks' time in case unforeseen difficulties arise.

Applications from recognized museums or scientific societies do not require to be supported by testimonials. The director of the museum should make application for each person who is collecting for the museum. If there is doubt as to the museum being well-known, it is suggested that written testimonials be furnished as required for individuals.

Individual collector's applications must be supported by written testimonials from two well-known ornithologists. Mere endorsement of the application will not suffice. The testimonial should refer fully to the ornithological work of the applicant and state the writer's opinion as to the value of that work.

Applicants should state the locality, if possible, certainly the Province in which they intend to collect.

Permits issued by this branch allow the holder to take birds protected by the Migratory Birds Treaty. Many other species are protected by Provincial laws, and permission to take them should be sought from the Provincial authorities.

The provincial officers concerned are:

	<i>Position</i>	<i>Address</i>	<i>Province</i>
Secretary, Game Conservation Board		Victoria	British Columbia
Chief Game Guardian		Edmonton	Alberta
Chief Game Guardian		Regina	Saskatchewan
Chief Game Guardian		Winnipeg	Manitoba
Deputy Minister of Game & Fisheries		Toronto	Ontario
Deputy Minister, Department of			

<i>Position</i>	<i>Address</i>	<i>Province</i>
Colonization, Mines and Fisheries	Quebec	Quebec
Deputy Minister of Lands and Mines	Fredericton	New Brunswick
Chief Game Commissioner	Halifax	Nova Scotia
	Charlottetown	Prince Edward Island

Any shipment whatever, by mail, express, or freight, of migratory bird specimens must be labelled with the number of the permit, the name and address of the shipper, and an accurate statement of the contents, in order to comply with the law.

So that all permit holders will have a proper concept of the principles governing the issue of scientific permits, these principles are printed in full with each permit. This portion of the permit was written by Mr. P. A. Taverner and Dr. R. M. Anderson, of the Museum of the Geological Survey of Canada.

As it is of general interest to ornithologists, it is quoted in conclusion.

Permit Principles.

Permits to take migratory birds, their nests and eggs, under the Migratory Birds Convention Act and Regulations are granted for the sole purpose of scientific study and not for the collection of objects of curiosity or personal or household adornment. Therefore, only such persons as take a serious interest in ornithology, and are competent to exercise the privilege for the advancement of knowledge, are eligible to receive such permits.

It is expected that the holders of permits will use them with reasonable discretion, taking only such specimens as their scientific needs require and avoiding unnecessary waste of life. The habitual taking of numbers of individuals for the purpose of obtaining a few specially desirable ones is deprecated, and it is urged that the collector take no more specimens than he has reasonable prospects of caring for, and will conscientiously endeavor to properly prepare each and all when taken.

It is also recommended that the holders of permits will, so far as is consistent with their object, be considerate of the local feeling in the neighbourhood where they collect and will demonstrate both by actions and speech that the scientific collector is sympathetic towards the principles of wild life conservation and not the rival of legitimate sportsmen.

It is required as an evidence of good faith that holders of permits label their specimens with the customary scientific data and properly care for them, not only at the time of collection but thereafter, giving them all reasonable protection against insect pests and other agencies of destruction, and will not permit them to be destroyed through carelessness or indifference.

As permits are granted for the purpose of general scientific advancement and not for individuals' benefit, specimens taken under them are to be

regarded as being in the nature of public trusts, and should be accessible to all duly qualified students, under only such reasonable restrictions as are necessary for their protection or as is consistent with the owner's work.

Finally, it is urged that provision be made so that specimens taken will ultimately find their way into permanent or public collections where they will be available for study by future generations and not be wasted and lost through neglect.

While all these conditions are not strictly mandatory, and their spirit will be liberally interpreted, they will be considered in the granting or renewal of each permit, and evidence of gross violation of them may be deemed sufficient ground for the refusal of an application or for the revocation of any permit already granted.

It is hoped and expected that the justice of these principles will be realized and that collectors will co-operate in advancing science to the utmost without unnecessary waste of valuable bird life.

HOYES LLOYD.

Ornithologist, Dominion Parks Branch. Dept. of the Interior.

Ottawa, June 30, 1919.

**Capt. Thomas Brown's 'Illustrations of the American Ornithology
of Wilson and Bonaparte.'**

EDITOR OF 'THE AUK':

In 'The Auk' for April, 1903, pp. 236-241, I gave an account of Capt. Thomas Brown's Edinburgh reproductions of the plates of Wilson and Bonaparte's 'American Ornithology.' I showed that Brown's scheme involved three independent reproductions of the American plates, one on copper in folio, one on copper in royal octavo, and one on stone in 16 mo. The three books that resulted from Brown's endeavor are among the rarest in ornithological literature and therefore of great interest to bibliographers.

In 1903 I was able to place only three copies (one imperfect) of the folio edition and one of the 16 mo. edition, the latter consisting of nineteen plates bound in a copy of Jameson's 1831 edition of Wilson and Bonaparte in your own library, Mr. Editor. Many years ago Professor Alfred Newton supplied Dr. Coues with a description of Part I of this miniature edition, and its title-page is quoted in Coues's Bibliography, 'Birds of the Colorado Valley,' p. 600; but when I saw Professor Newton in June, 1902, he had lost all recollection of it and we together searched his library for it in vain.

Of the existence of the royal-octavo edition I was unable to find a trace. I surmised, however, from the way the plates of Jardine's 1832 Wilson and Bonaparte were unmercifully trimmed to match the size of the text, that this edition was soon appropriated by Jardine to illustrate his own work.

This surmise is rendered a certainty by a copy of a book now in my possession. It consists of the ninety-seven hand-colored copper plates of Jardine's edition, printed on larger paper, with three title-pages bound in. The titles read as follows:—

Illustrations | of the | American Ornithology | of | Alexander Wilson, | and | Charles Lucian Bonaparte. | Engraved by W. H. Lizars, | and Coloured by Captain Thomas Brown, F. L. S. | President of the Royal Physical Society. | Edinburgh: | Printed by Andrew Shortrede. | MDCCC XXXII.

The book is of a squarish shape and might well be termed a small quarto. It is bound in full green morocco, gilt-edges. The plates (trimmed) measure 10 in. \times 7½ in. In untrimmed copies of Jardine's edition these plates measure 8½ in. \times 5½ in. This book was offered for sale in 1918 by E. P. Dutton & Co. of New York (catalogue price, \$40); was bought by N. J. Bartlett & Co. of Boston and sold by them to Mr. John E. Thayer of Lancaster, Mass., who generously gave it to me.

In Maggs Bros.' catalogue No. 316, London, November, 1913, a book was advertised called 'Wilson (Alex.) and Bonaparte (Charles Lucian), Illustrations of American Ornithology,' 4to, morocco, gilt, Edinburgh, 1832, £4, 4s. It was described as a complete set, on large paper, of the plates of Jardine's edition, with three title-pages bound in. What I infer from the description was the same copy was still offered for sale at the same price in Maggs' catalogue, No. 355, in 1917. Judging from the description this was without doubt the same work that Mr. Thayer secured and I fancy from its peculiarities that it was the identical copy.

Since the publication of my letter in 'The Auk' of April, 1903, I have succeeded in placing eight more copies of Brown's folio 'Illustrations.' I append a census of the known copies, which I hope may be the means of bringing others to the light.

It appears from contemporary notices that a few copies of the folio edition were issued in elephant folio. The only example of this *édition de luxe* that I know of is one that I bought of Walter T. Spencer, a London bookseller, in July, 1904. It was offered for sale in Spencer's catalogue No. 120 for £3, 10s. Mr. Spencer informed me that he got it at an auction sale in Dundee in the winter of 1903-04. It lacks six plates (4, 5, 11, 14, 84, 93), but is otherwise in superb condition, and is bound, uncut, in half green-morocco. The plates measure 27 in. \times 22 in.; they are colored (especially as regards the landscape accessories of the water-bird plates) more skillfully than in the smaller folio issue.

Of the smaller, royal folio issue, I have located the following copies:—

1. Library of the Zoölogical Society of London. A perfect copy, which I collated May 8, 1902 (see 'The Auk,' April, 1903, p. 237).
2. Library of Cambridge University. This copy was bought in 1900 for £2, 5s. from Richard Cameron, a book-dealer of Edinburgh, by Professor Alfred Newton of Magdalen College, Cambridge. From a letter which I received from Professor Newton in July, 1900, I learn that this

copy, although it contains the full number of pages and plates, is "by no means in good condition." It is bound in cloth and measures 21 in. \times 16 $\frac{1}{2}$ in. I assume that it came with the rest of Professor Newton's library into the possession of Cambridge University on the death of the Professor.

3. Library of the Arnold Arboretum, Harvard University, Jamaica Plain, Mass. Purchased for \$200 from N. J. Bartlett & Co. of Boston in 1911 by Mr. John E. Thayer and presented by him to the Arnold Arboretum. A perfect copy, bound in full purple morocco, gilt edges, 19 $\frac{1}{2}$ in. \times 15 $\frac{1}{2}$ in.

4. Library of John E. Thayer, Lancaster, Mass. Bought of N. J. Bartlett & Co., Boston, for \$25. Perfect copy, bound in half morocco. Plate 44 wants fig. 5 (Hudsonian Titmouse) and plate 61 wants two figures (Mangrove Hummingbirds). These figures were apparently added after this copy was printed off.

5. Library of Samuel Henshaw, Cambridge, Mass. Bought of John Wheldon & Co., London, for £24, in July, 1907. Full red-morocco binding, gilt edges, by W. H. Smith & Son, Strand, London. 20 $\frac{3}{4}$ in. \times 15 $\frac{1}{2}$ in. A perfect copy and an early one, as plate 44 lacks the figure of the Hudsonian Titmouse, and plate 61 the two figures of the Mangrove Hummingbird. This copy has the original *printed* dedication to the Earl of Airlec, dated Edinburgh, May, 1831. This leaf was cancelled by the later *engraved* dedication to the same nobleman, which is also bound in this copy. On page ii is written "T. Thurlow, Esq., Horsham."

6. Library of Theodore N. Vail, Morristown, N. J. Perfect copy, half red-morocco, gilt edges. Formerly belonged to Mr. Frederic Gallatin, Jr., of New York. Catalogue of a Collection of Books on Ornithology in the Library of Frederic Gallatin, Jr., p. 139, New York, 1908.

7. Library of H. C. Tuttle, Naugatuck, Conn. Bought of Quaritch in London, 1919, by N. J. Bartlett & Co., of Boston, and sold by them in June, 1919, to Mr. Tuttle for \$200. Bound in half dark-green morocco, gilt edges, 21 in. \times 16 in. Plate 112 is a hand-made copy of the original. This copy, like Nos. 4 and 5, is an early impression before the three figures were added to plates 44 and 61.

8. Library of Walter Faxon, Lexington, Mass. Bought of William J. Gerhard, Philadelphia book-dealer, June 20, 1904, for \$25. Mr. Gerhard imported it from Brussels at a cost of \$18.50. Bound in half calf, gilt edges, 20 $\frac{1}{2}$ \times 16 $\frac{1}{2}$ in. Wants four plates (1, 19, 104, 124) and has been roughly used by some former owner. Contains a pencil autograph "Rich. Darling," and an embossed book-plate with the initials I C and an armorial crest,—a wivern segreant azure.

9. Library of Mrs. R. E. Hopkins, Tarrytown, N. Y. This copy fetched \$31 at Bangs's auction-sale in New York, Nov. 23, 1896. It came under the same auctioneer's hammer again on Feb. 23, 1897, when it went to Major R. E. Hopkins for \$34. It was shown to me in 1901 by the widow of Major Hopkins. An imperfect copy, lacking title-page, dedication, index, and thirty-seven plates. It has one of the original-part wrappers bound in (see 'The Auk,' April, 1903, p. 238).

10. Library of Ruthven Deane, Chicago, Ill. A fragment, bought of Dodd, Mead & Co., New York, Nov. 1, 1909, consisting of the first five parts of five plates each, in the paper wrappers as issued. One of the wrappers was given by Mr. Deane to Mr. John E. Thayer.

The fate of the following three copies I have not been able to learn:—

In Bernard Quaritch's General Catalogue, London, 1880, p. 375, the first six parts of Brown's "Illustrations," consisting of thirty colored plates, royal folio, were offered for sale at £5.

At a sale of Duke of Sutherland property by Sotheby, Wilkinson and Hodge, London, Nov. 19–24, 1906, a complete copy was sold, royal folio, half morocco, gilt tops, for £7. It was bought by Walford Bros., book-dealers in London, but whether on a private order or not I do not know.

In N. J. Bartlett's Catalogue No. 64, Boston, November, 1915, a copy was advertised at \$170, half morocco, uncut, 123 colored plates (there should be 124).

This work was issued in parts, each part containing five plates. The first part appeared in 1831, price, 15s., colored, 10s. 6d., plain, for the royal folio edition; £1, 1 s. for the elephant folio. By the time part IX. was published the price per part had risen to £1, 1s., colored, 12s. plain, for the regular edition; and to £1, 11s., 6d., colored, 15s. plain, for the elephant folio. I know of no copies with plain plates.

Capt. Brown's "Illustrations of the Game Birds of North America," which is nothing but sixteen plates of the larger work, issued with a different title-page, dated 1834 (see 'The Auk,' April, 1903, pp. 238–240), is an even scarcer book. I can locate only three copies of it, viz.:—

1. Library of Walter Faxon, Lexington, Mass. I bought this in a bookshop in Birmingham, June 2, 1902, for £1, 10s. It is bound in cloth, uncut; the plates measure $21\frac{1}{2}$ in. \times $16\frac{1}{2}$ in. It contains the book-plate of C. I. Anderson, and the autograph signature of A. A. Anderson, Stoke Newington. The water-marks on the plates of this copy are dated 1835, indicating that these plates were published a year later than the year on the title-page.

2. Library of John E. Thayer, Lancaster, Mass. Bought of John Wheldon & Co., London (Cat. 34, 1906, £5, 18s.), by N. J. Bartlett & Co., of Boston, Mass., and sold by the latter to Mr. Thayer. Royal folio, cloth boards.

3. John Crerar Library, Chicago, Ill. For the knowledge of this copy I am indebted to Mr. Ruthven Deane. He informs me that it measures 21 in. \times $16\frac{1}{2}$ in.

A copy of the "Illustrations of the Game Birds" was listed in R. H. Porter's Catalogue of the late Rev. H. B. Tristram's Library, 1906, £3, 3s., but I do not know where this copy now rests.

Yours very truly,

WALTER FAXON.

Lexington, Mass., August 12, 1919.

Feeding of Grackles.

EDITOR OF 'THE AUK':

In 'Bird Genealogy' (Auk, XXIX, 1912, p. 294), I called attention to an interesting habit of the Bronzed Grackle of picking up food from the water, after the manner of a Herring Gull. "A Grackle will hover close to the water its head to the wind, and then suddenly drop, and with its bill pick up from the surface some morsel as gracefully as a Gull. This they do at times without wetting their plumage; at other times the bill, feet and tail are immersed, while I once saw a Grackle splash his whole body into the water and entirely immerse his head, to emerge without difficulty, carrying in his bill what appeared to be a small silvery fish."

This latter incident I witnessed at the Charles River Basin in Boston. Since then this habit has become more common among the Grackles in this locality, and at almost any hour of the day during this last June, one may see several Grackles dipping into the water for fish. The fish are brought to the coping of the Esplanade and eaten, or taken away to feed, no doubt, the young or mate. With the kind assistance of a Park policeman who succeeded in frightening off the birds before they could seize and carry off the fish from the coping, I secured three of these fish. They proved to be the three-spined Stickleback, *Gasterosteus aculeatus*.

Whether this is a new habit acquired by a small community of Grackles, or whether it is an old and universal habit I am anxious to learn, and it is for this reason that I am sending this letter to 'The Auk.' In either case the matter seems to me to be of exceeding interest to the student of habits and of evolution. Hitherto I have been unable to find any reference in literature to the habit. I shall be much obliged for any light on the subject.

On several occasions I have noticed that the fish were alive and active when the Grackles deposited them on the coping.

CHARLES W. TOWNSEND.

Boston, Mass.

NOTES AND NEWS.

AMERICAN ornithology suffered an irreparable loss in the death of William Brewster on July 11, last. While it was generally known that his health had been failing for several years past, few outside the circle of his most intimate friends knew that his condition was critical, and the news of his death came with the shock of an unexpected blow.

Great as were his attainments as an ornithologist it was not these alone that gained him the wide recognition that he received. His fair and impartial judgment of all questions that came before him created a profound and widespread respect for his opinion; his keen and unconcealed delight in everything out of doors, be it bird, mammal, or plant, was contagious and inspiring; while his uniform courtesy and kindness to young student and master alike, endeared him to all with whom he came in contact.

To the American Ornithologists' Union the death of William Brewster is a calamity. To him more than to anyone else was due the founding of the Nuttall Ornithological Club, from which sprang the A. O. U., and both organizations throughout their existence have profited from his counsel and advice in all matters concerned with their activities. So closely indeed was he associated with the life of the Union that we find it almost impossible to conceive of a meeting of the Council without Mr. Brewster's presence. His influence was always toward the best effort and the highest ideals, both in scientific work and in personal conduct, and association with him was always stimulating and improving.

Probably he himself never realized the part he played in shaping the ornithological activities of others, and his influence upon the development of American ornithology cannot easily be measured.

The president of the A. O. U. has appointed Mr. Henry W. Henshaw, Mr. Brewster's lifelong friend, to prepare the biographical sketch which will be presented at the annual meeting of the Union in November, and which will appear in the January issue of 'The Auk.'—W. S.

Motoyoshi NAMIYE of Tokyo, Japan, a Corresponding Fellow of the A. O. U., died May 24, 1918. He was born at Maruyama-Nishikata-machi, Hongo, Yeddo (Tokyo), February 15, 1854. He was a member of the faculty of Zoology in the Tokyo Educational Museum, and Assistant of the Zoological Institute, Science College, Imperial University of Tokyo, an honorary member of the Tokyo Zoological Society, and a councilor of the Ornithological Society of Japan. He was actively interested in birds, mammals, reptiles, and amphibia and published many interesting papers on these groups of vertebrates. Following are the principal places in

Japan where he made collections, and as a result of these collections many important additions were made to our avifauna: The Province of Yamato on the island of Hondo in 1876, the Loo Choo Islands in 1886 and 1909, the Seven Islands of Idzu in 1887, and Tsushima in 1891.

Four Japanese birds bear his name: *Dryobates leucotos namiyei* Stejneger, 1886; *Luscinia komadori namiyei* (Stejneger), 1886; *Chelidon javanica namiyei* Stejneger, 1886; and *Parus varius namiyei* Kuroda, 1918.—NAGAMICHI KURODA.

MERRILL WILLIS BLAIN, an Associate of the Union from 1910 to 1916, died at his home in Los Angeles, December 26, 1918, in the 25th year of his age. According to a brief notice in 'The Condor' for May, 1919, he was born at Oceanview, Calif., April 24, 1894, received his early education in San Francisco, and at the time of his death was a third-year student in the Detroit College of Medicine and Surgery. He was an enthusiastic ornithologist, a member of the Cooper Ornithological Club and the Wilson Ornithological Club, and had a good collection of the birds and eggs of Southern California.—T. S. P.

LEO WILEY of Palo Verde, Imperial Co., Calif., who was elected an Associate of the Union in 1917, died of pneumonia following an attack of influenza, at Shandon, Calif., October 31, 1918. Mr. Wiley was born at Silverton, Colo., September 20, 1890, and at the time of his death was 28 years of age. He was the only son of A. P. Wiley and when four years old lost his mother. At an early age he developed a taste for natural history and when not in school spent much time in the company of his father in the wilds of Colorado and California. After a year with A. E. Colburn, the taxidermist of Los Angeles, he followed the trade of taxidermist at Palo Verde. During the Colorado River Expedition of 1910, Dr. Joseph Grinnell learned of young Wiley's interest in natural history and induced him to report things of interest among the birds of the region. As a result many specimens found their way to the Museum of Vertebrate Zoology at Berkeley, and some of his observations appeared in the columns of 'The Condor.' Among several notes of interest are his records of the breeding of the White-winged Dove, the Mexican Ground Dove, and Harris' Hawk near Palo Verde. Of the last species four young were found in July, 1916, and a set of three eggs on April 5, 1917. Since his death his collection has been presented by his father to the Museum of Vertebrate Zoology at Berkeley, Calif., where it will be accessible and permanently preserved.—T. S. P.

A COMMITTEE has been formed in England under the chairmanship of Lord Rothschild to establish a memorial to the late Frederick DuCane Godman, in acknowledgment of his lifelong devotion to the interests of natural history. The memorial will take the form, primarily, of a bronze tablet with medallion portraits of Mr. Godman and his friend and colla-

borator, the late Osbert Salvin, which is to be placed in the Natural History Museum at South Kensington. Any surplus over what may be required for the tablet will be added to a fund to be known as the "Godman Memorial Exploration Fund" for which the widow and daughters of Mr. Godman have subscribed £5,000, the proceeds to be devoted to the making of collections for the advancement of science and for the benefit of the Museum.

This plan cannot be too highly endorsed and we trust that the necessary subscriptions will soon be secured. Salvin and Godman will ever be remembered in America by their classic 'Biologia Centrali-Americana,' while both were Honorary Fellows of the A. O. U. Subscriptions should be sent to C. E. Fagan, Honorary Treasurer of the Godman Memorial, Natural History Museum, Cromwell Road, London, S. W. 7.

MR. P. WYTSMAN, editor of 'Genera Avium,' has issued a circular soliciting additional subscribers to this worthy work. Additional support is absolutely necessary on account of the greatly increased cost of publication. He may be addressed Quatre-Bras, Tervueren (Belgium) and circulars and sample plate will be sent upon application.

INDEXES TO ORNITHOLOGICAL LITERATURE — JOURNALS. — A large proportion of modern ornithological literature appears in the form of short articles and notes in journals or other periodical publications. These are usually indexed on completion of the volume in which they are published, but as the series increases consultation of the annual indexes becomes so burdensome that few readers take the time necessary to run through many years. Thus the contents are apt to become practically lost unless made available through the publication of good general indexes. The recent appearance of the 'Second Ten-Year Index to the Condor' and the plans now being made for another decennial 'Index of The Auk,' suggest the importance of more attention to this feature of ornithological publication and more careful consideration of what has already been accomplished in rendering accessible the ever-increasing mass of ornithological papers.

Among English serials the 'Proceedings of the Zoological Society of London,' one of the oldest scientific publications now in existence which publishes papers on birds, was begun in 1830 and has thus far published 7 general indexes for its 80 or more volumes — the first in 1847 and one every ten years from 1860 to 1910. 'The Ibis,' now in its 61st volume, began in 1859 and has appeared in series of six volumes each. It has the distinction of being one of the most frequently indexed scientific journals, with at least four sets of indexes — an annual one at the end of each volume, a six-year subject index at the close of each series, a general index of genera and species at the end of each third series, and a general subject-index for the first 36 volumes. Of the general indexes three have been published for series 1-3, 4-6, and 7-9, covering the years 1859-1912; but only one general subject-index has thus far appeared and this includes the first six series from 1859 to 1894. For later years it is necessary to consult the indexes at the end of each series. In addition a list of the

'Coloured Plates of Birds' from 1859 to 1917 has appeared in the volume for 1918, pp. 10-51. 'Stray Feathers' has had a general index provided for its eleven volumes, 1873-1888, and 'Novitates Zoologicae' in a recent number (vol. XXI, p. 457) has a list of the new species described in the first 20 volumes.

Of the German serials at least three are provided with general indexes. The earliest is 'Naumannia,' which has an index to six of its eight volumes for the years 1850-1856. The 'Journal für Ornithologie,' founded in 1853, has issued three general indexes — one for the 15 years 1853-1867, a second for the 26 years 1868-1893, and the third for the 20 years 1894-1913 — thus including 61 of its 67 volumes. The second index, containing 296 pages, appeared in the first quarter of 1894, less than three months after the completion of the last volume indexed, and established a record for prompt publication that is not likely to be surpassed. The third periodical, the 'Ornithologische Monatschrift,' established in 1876, has at least two general indexes issued at 12-year intervals for the years 1876-1887 and 1888-1899.

Of the American journals, several have thus far been provided with general indexes. 'The Auk' has two, one covering the 25 years, 1876-1900, and including the eight volumes of the 'Bulletin of the Nuttall Ornithological Club' in addition to the first seventeen of 'The Auk'; and the second, a decennial index for the years 1901-1910. Another decennial index for the volumes from 1911 to 1920 should be prepared in the near future. 'Bird Lore,' now in its 21st volume, has a general index to the first 15 volumes, and 'The Condor,' also in its 21st volume, has issued two decennial indexes for the volumes down to the close of 1918. In this connection mention should perhaps be made of Howe's 'Faunal Index to the Ornithologist and Oologist,' volumes I-XVIII, which appeared in 'Contributions to North American Ornithology,' vol. I, 1901-1904. This is incomplete, but includes the states from Alabama to New Mexico.

No general indexes have been provided for 'British Birds,' 'The Emu,' the 'Ornithologische Monatsberichte,' 'Cassinia,' the 'Wilson Bulletin,' and certain other ornithological journals, and consequently readers must consult each volume to ascertain the contents. In the case of the eleven journals above mentioned it is possible by consulting about 25 general indexes to gain ready access to notes and observations scattered in more than 300 volumes containing many thousands of pages.— T. S. P.

WHERE AMERICAN ORNITHOLOGISTS REST. — Mt. Vernon, Va., and Sleepy Hollow Cemetery in Concord, Mass., have become famous as the last resting places of some of America's leading men. George Washington's tomb at Mt. Vernon is the mecca of many a traveler from abroad who visits the National Capital, and the graves of Emerson, Hawthorne, Thoreau, and others in Sleepy Hollow are frequently visited and widely known. Botanists often place on record references to the spots which mark the graves of their departed men of genius, but ornithologists apparently have given less attention to such details. Few persons can tell the location of

the last resting places of many of our leading ornithologists and fewer still have visited the spots associated so closely with the history of American ornithology: Arlington National Cemetery, containing the stones of Bendire and Coues; Oak Hill in Georgetown, the resting place of Baird, Gill, Jouy, and Kidder; the Old Swedes' Churchyard in Philadelphia, with its graves of Alexander Wilson and George Ord; Trinity Church Cemetery in New York near the old Audubon home, where John James Audubon, his wife, and two sons, and George N. Lawrence are buried; and Mount Auburn Cemetery in Cambridge, the burial place of Thomas M. Brewer, William Brewster, Henry Bryant, Samuel Cabot, Jr., James C. Merrill, and Henry A. Purdie — these and several others that might be mentioned are all spots of special ornithological interest.

To facilitate the location of these places by those who may be interested, a list has been prepared, containing such data as are now available regarding the graves of 35 of America's leading students of birds. More than half of these ornithologists were former members of the A. O. U. Their graves are located as definitely as possible and, with the data here given, may be readily found. All except four or five are marked with stone monuments:

JOHN JAMES AUDUBON, 1785-1851.

New York City — Trinity Church Cemetery, 155th St. and Broadway (immediately in rear of the church).

JOHN BACHMAN, 1790-1874.

Charleston, S. C. — St. John's Lutheran Church, cor. Charles and Clifford Streets (in front of the altar).

SPENCER FULLEERTON BAIRD, 1823-1887.

Washington, D. C. — Oak Hill Cemetery, Georgetown, Baird-Churchill vault, facing Rock Creek.

FOSTER ELLENBOROUGH LASCELLES BEAL, 1840-1916.

Beltsville, Prince George Co., Md., about 10 miles northeast of Washington, D. C. — St. John's P. E. Churchyard.

CHARLES EMIL BENDIRE, 1836-1897.

Washington, D. C. — Arlington National Cemetery, Va. (north of main road between Ft. Myer entrance and Arlington Mansion, and 100 yards east of the gate).

GEORGE AUGUSTUS BOARDMAN, 1818-1901.

St. Stephen, N. B. — Rural Cemetery.

FRANK BOLLES, 1856-1894.

Cambridge, Mass. — Forest Hills Cemetery, Lot 2368, Thistle Path (unmarked).

THOMAS MAYO BREWER, 1814-1880.

Cambridge, Mass. — Mt. Auburn Cemetery, Lot 792, Yarrow Path.

WILLIAM BREWSTER, 1851-1919.

Cambridge, Mass. — Mt. Auburn Cemetery, Lot 1099, Larch Avenue.

- THOMAS BRIDGES, 1807-1865 (First resident California ornithologist).
San Francisco, Calif.—Laurel Hill Cemetery, Lone Mountain, South Ridge, Tier 58, Lot 24 (unmarked 1917).
- HENRY BRYANT, 1820-1867.
Cambridge, Mass.—Mt. Auburn Cemetery, Lot 391, Alder Path.
- SAMUEL CABOT, JR., 1815-1885.
Cambridge, Mass.—Mt. Auburn Cemetery, Lot 526, Rose Path.
- JOHN CASSIN, 1813-1869.
Philadelphia, Pa.—North Laurel Hill Cemetery, Ridge Ave., near Schuylkill River, Lot 97, Sec. J.
- WELLS WOODBRIDGE COOKE, 1858-1916.
Ripon, Wis.
- JAMES GRAHAM COOPER, 1830-1902.
Oakland, Calif.—Mountain View Cemetery, Plot 31, Lot 15.
- ELLIOTT COUES, 1842-1899.
Washington, D. C.—Arlington National Cemetery, Va. (north of main road between Ft. Myer entrance and Arlington Mansion).
- DANIEL GIRAUD ELLIOT, 1835-1915.
New York City — Woodlawn Cemetery.
- WILLIAM GAMBEL, 1819?-1849.
Rose's Bar, Feather River, Calif.—(grave obliterated.)
- THEODORE NICHOLAS GILL, 1837-1914.
Washington, D. C.—Oak Hill Cemetery, Georgetown, Lot in eastern part of Cemetery near Rock Creek.
- JACOB POST GIRAUD, JR., 1811-1870.
New York City — Marble Cemetery, Second St. (Giraud vault, No. 167).
- PIERRE LOUIS JOUY, 1856-1894.
Washington, D. C.—Oak Hill Cemetery, Georgetown, South Border, Lot 1, Site 62 (unmarked).
- JEROME HENRY KIDDER, 1842-1889.
Washington, D. C.—Oak Hill Cemetery, Georgetown.
- LUDWIG KÜMLIEN, 1853-1902.
Milton, Wis.
- GEORGE NEWBOLD LAWRENCE, 1806-1895.
New York City — Trinity Church Cemetery, 155th St. and Broadway (Lawrence vault, west of Broadway).
- GEORGE ARCHIBALD MCCALL, 1802-1868.
Philadelphia, Pa.—Christ's Church.
- EDGAR ALEXANDER MEARNs, 1856-1916.
Washington, D. C.—Washington Biologists' Field Club, Plummer Island, Potomac River (about 9 miles above Washington).
- JAMES CUSHING MERRILL, 1853-1902.
Cambridge, Mass.—Mt. Auburn Cemetery, Lot 3487, Snowdrop Path.
- GEORGE ORD, 1781-1866.
Philadelphia Pa.—Old Swedes' (Gloria Dei) Churchyard.

DANIEL WEBSTER PRENTISS, 1843-1899.

Washington, D. C.—Glenwood Cemetery, Sec. 4, Lot 6.

HENRY AUGUSTUS PURDIE, 1840-1911.

Cambridge, Mass.—Mt. Auburn Cemetery, Lot 1484, Mimosa Path.

WILLIAM LE GRANGE RALPH, 1851-1907.

Utica, N. Y.—Forest Hill Cemetery.

THOMAS SAY, 1787-1834.

New Harmony, Ind.—Main St. (in rear of house in which he died).

JOHN KIRK TOWNSEND, 1809-1851.

Washington, D. C.—Congressional Cemetery, Range 34, Site 201.

BRADFORD TORREY, 1843-1912.

South Weymouth, Mass.

ALEXANDER WILSON, 1766-1813.

Philadelphia, Pa.—Old Swedes' (Gloria Dei) Churchyard.

T. S. PALMER.

COMPLETE SETS OF 'THE AUK.'—A recent survey made by the Secretary indicates that complete sets of 'The Auk,' including the two general indexes, are comparatively rare and are becoming more valuable year by year. While there is no complete list of such sets at present available it is probable that the total number does not exceed 150 and the total of those actually located falls considerably below this figure. Nearly half of those now known are in public libraries and nearly 25 per cent of those in private libraries are in Washington, D. C. As time goes on the number in public libraries will increase and the number of private sets will tend to decrease. During recent years several sets have been destroyed by fire, at least two having been burned in the San Francisco fire of 1906 and another in the fire in the library of Wellesley College a few years ago. Members will do well to look over their sets and secure any missing volumes while still obtainable. Owners of complete sets who have not already done so are requested to communicate with the Secretary in order that the record of such sets may be made as accurate as possible.—T. S. P.

MR. ROBERT CUSHMAN MURPHY, of the Brooklyn Museum, sailed on August 23 for Peru, where he will be engaged for several months in making investigations of the birds of the coastal islands. Moving pictures will be made of some of the great colonies of Pelicans, Cormorants, and other sea birds of that region.

LIEUT. ERNEST G. HOLT left in July for São Paulo, Brazil, where he expects to be located during the next three years. He will be engaged in private business but will devote his spare time to collecting and studying birds and mammals.

THE SMITHSONIAN AFRICAN EXPEDITION, which will cross the continent from south to north, following the Cape to Cairo route, reached Cape Town,

South Africa, about the middle of August. The expedition, which is under the direction of Edmund Heller, will devote special attention to making moving pictures. Mr. H. C. Raven, who returned recently from Celebes, will collect birds and mammals. After working in the vicinity of Cape Town, the party will proceed northward to the Falls of the Zambesi and Rhodesia.

ACCORDING to the July 'Ibis,' two Foreign Fellows of the Union are in Spain this summer. Dr. Ernest Hartert is collecting on the mainland and Mr. H. F. Witherby is working on the Balearic Islands.

MR. H. S. SWARTH and Mr. Joseph Dixon have been working this summer in southeastern Alaska in the interests of the Museum of Vertebrate Zoology. They left Berkeley in May, expecting to be absent about four months. Their route lies in the vicinity of Wrangel and extends up the Stikine River into the interior, in the vicinity of Telegraph Creek.

FROM the July 'Condor' we learn that A. B. Howell has been touring northern California and Oregon, visiting the type localities of certain birds and mammals; H. G. White and Richard M. Hunt are collecting in the Santa Lucia Mountains in southern Monterey County, Calif., for the Museum of Vertebrate Zoology; and Lawrence Huey has been in the field in the northern Sierra Nevada in the interests of Donald R. Dickey.

THE Denver Museum has had a party in southern Louisiana this summer, obtaining material for several habitat groups from some of the bird colonies on the coast.

THE Fifth Oological Dinner in London was announced for September 10. This dinner, to which naturalists interested in Oology, whether members of the B. O. U. or not are invited, has become a regular annual meeting in September. Its objects are "to furnish opportunities of discussing Oology, exhibiting rare eggs and generally stimulating investigation in the branch of science." An exhibit of the eggs of Warblers was the feature of the meeting this year.

THE editor of 'The Auk' was engaged in field work in the Chiricahua Mountains, Arizona, from May 19 to August 1, at the hospitable camp established there by J. Eugene Law, Business Manager of 'The Condor.' His absence necessitated the printing of the July 'Auk' before he left Philadelphia, and will account for certain delays in publishing and acknowledging contributions.

MEMBERS intending to present papers at the next annual meeting, to be held in New York City, November 11-13, are requested to notify the Secretary before November 5 as to the titles of their communications and

the length of time required for their presentation. In order to allow time for discussion, which is one of the principal objects of the meeting, papers which are not illustrated should be limited to 30 minutes or less. A special invitation is extended to Associates to present papers and take part in the discussions. The meeting promises to be one of the best ever held. We cannot too strongly urge all members to be present, and this reminder is especially directed at those who have not previously attended these gatherings.

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- Page 15, line 4, for *hudsonicus* read *hudsonius*.
" 37, " 15 from bottom, for *hudsonicus* read *hudsonius*.
" 71, " 12 from bottom, for *sayi* read *sayus*.
" 138, " 20, for county read country.
" 143, " 21, for K. read M.
" 145, " 8 from bottom, for Lawler read Lawyer.
" 153, " 11, for Oberholder read Oberholser.
" 157, " 18 from bottom, for L. H. read S. H.
" 162, " 9, for Lieut. read Lieut.-Col.
" 163, " 4, for December 26 read December 25.
" 286, " 16, for Megalaima read Megalæma.
" 304, " 22 for *Peles* read *Veles*.
" 308, " 9 from bottom, for Erklaw read Ekblaw.
" 309, " 16, for Simonds read Simons.
" 310, " 2 from bottom for Woodchuck read Woodcock.
" 312, " 16, for *Nothorchilus* read *Notorchilus*.
" 323, " 10, for 85 read 83.

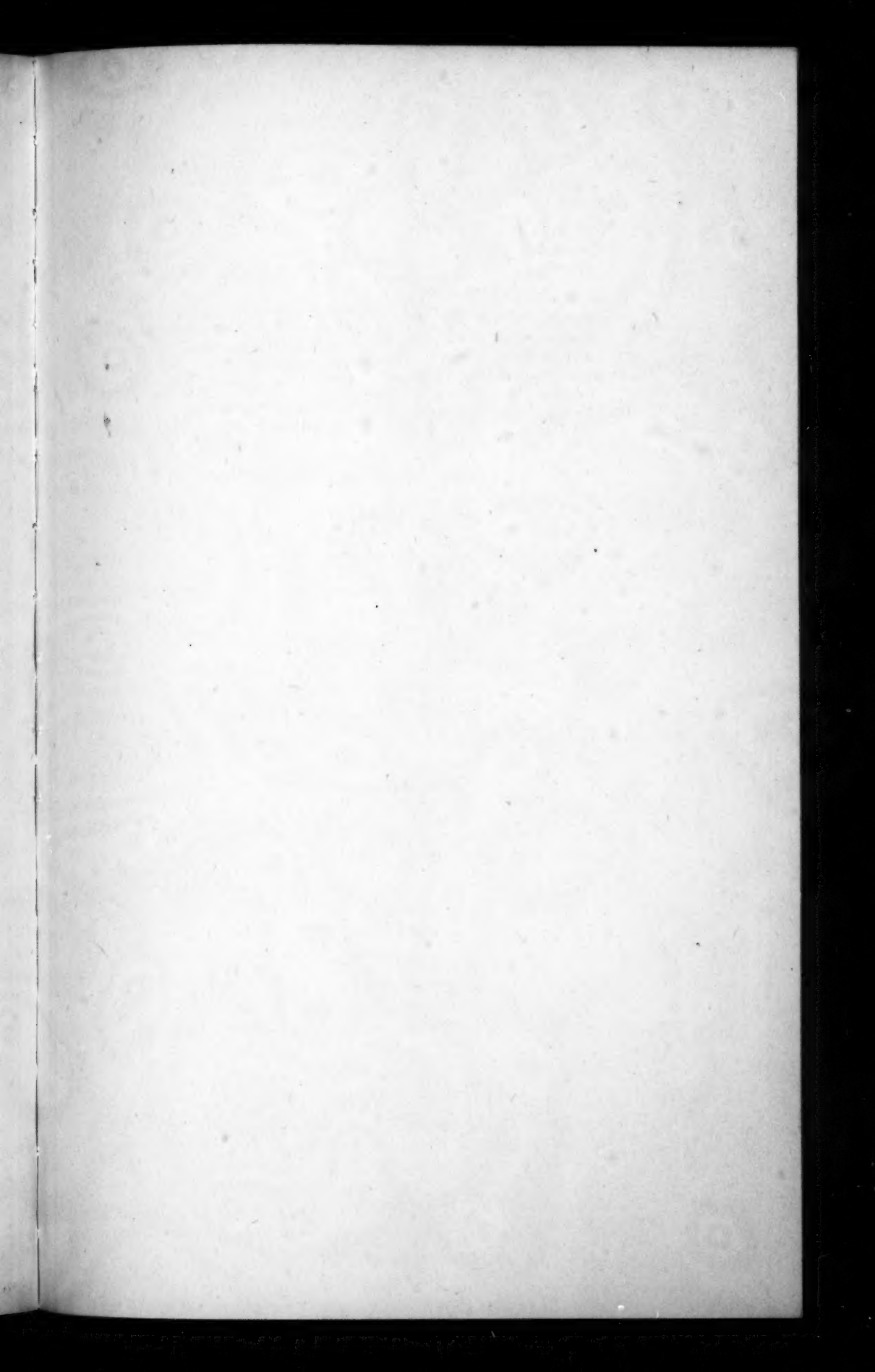
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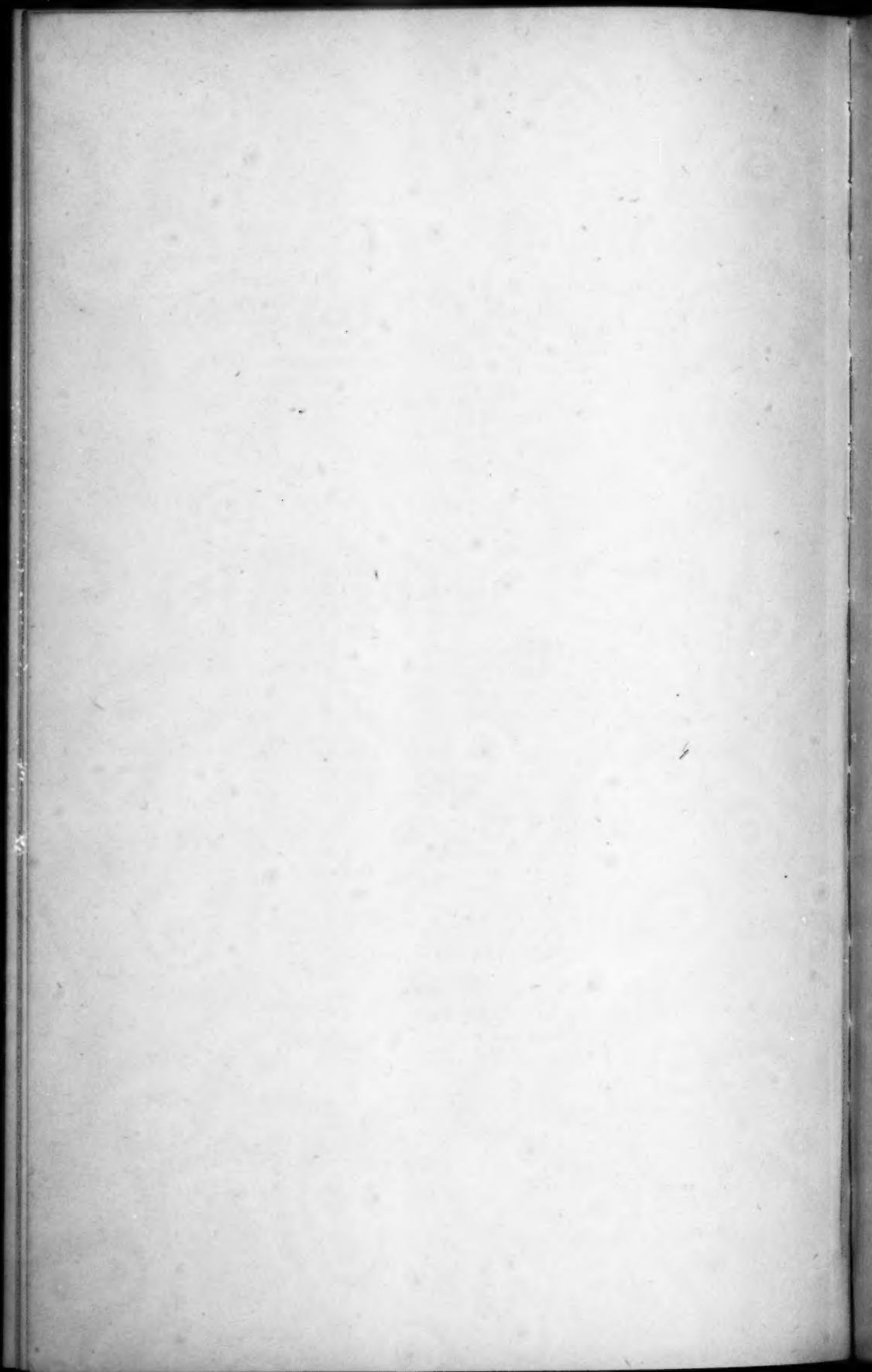
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MEETINGS OF THE American Ornithologists' Union

Since its organization in 1883 the American Ornithologists' Union has held one special and 35 annual meetings.

The number of Fellows (known as Active Members prior to 1902) has always been limited to 50 and the number present at any meeting has varied from 7 to 28. The attendance of other classes of members in recent years averages over 100.

Meeting	Date	Place	Fellows Present	Total Membership
1	1883, Sept. 26-28	1st New York	21	23
2	1884, Sept. 30-Oct. 2	2d New York	16	143
3	1885, Nov. 17-18	3d New York	16	201
4	1886, Nov. 16-18	1st Washington	20	251
5	1887, Oct. 11-13	1st Boston	17	284
6	1888, Nov. 13-15	2d Washington	20	298
7	1889, Nov. 12-15	4th New York	20	400
8	1890, Nov. 18-20	3d Washington	20	465
9	1891, Nov. 17-19	5th New York	14	493
10	1892, Nov. 15-17	4th Washington	20	557
11	1893, Nov. 20-23	2d Cambridge	17	582
12	1894, Nov. 12-15	6th New York	15	616
13	1895, Nov. 11-14	5th Washington	19	667
14	1896, Nov. 9-12	3d Cambridge	14	673
15	1897, Nov. 8-11	7th New York	18	679
16	1898, Nov. 14-17	6th Washington	21	695
17	1899, Nov. 13-16	1st Philadelphia	16	744
18	1900, Nov. 12-15	4th Cambridge	19	748
19	1901, Nov. 11-14	8th New York	18	738
20	1902, Nov. 17-20	7th Washington	25	753
20a	1903, May 15-16	1st San Francisco	7	—
21	1903, Nov. 16-19	2d Philadelphia	19	775
22	1904, Nov. 28-Dec. 1	5th Cambridge	17	808
23	1905, Nov. 13-16	9th New York	17	860
24	1906, Nov. 12-15	8th Washington	24	750
25	1907, Dec. 9-12	3d Philadelphia	20	850
26	1908, Nov. 16-19	6th Cambridge	17	888
27	1909, Dec. 6-9	10th New York	19	866
28	1910, Nov. 14-17	9th Washington	23	897
29	1911, Nov. 13-16	4th Philadelphia	18	887
30	1912, Nov. 11-14	7th Cambridge	18	929
31	1913, Nov. 10-13	11th New York	28	992
32	1914, Apr. 6-9	10th Washington	27	1101
33	1915, May 17-20	2d San Francisco	11	1156
34	1916, Nov. 13-16	5th Philadelphia	26	830*
35	1917, Nov. 12-15	8th Cambridge	21	891
36	1918, Nov. 11	12th New York	14	953

The next regular meeting — the 37th Stated — will be held at New York, Nov. 11-13, 1919.

* Decrease due largely to change from Spring to Fall leaving 18 months without an election.

